

YOUR ACHES

What to DO about them

BY THE SAME AUTHOR

New Bodies for Old

Lady Be Fit

YOUR ACHES

What to DO about them

by Dorothy Nye

Illustrations by MAMIE HARNON

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To
MY MOTHER

ACKNOWLEDGMENTS

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THE WHYS AND THE WISE

1

SO YOU HAVE AN ACHIE.

It pricks at your knees, grinds at your shoulders, pierces your back, gnaws at your feet. But it does not make you unusual. The modern physician's office echoes with complaints of

"right along the shoulder blades, doctor"

"and it just kills my knees to climb stairs."

"I don't see why my back hurts so when I just sit at a desk all day"

Sensible people, these complainers. It is always wise to ask a physician's advice when an ache or pain persists. You have probably done so yourself and just as probably heard the doctor pronounce you pathologically and anatomically sound. To his sensitive ears your heart pumps strongly regularly. The chest X ray shows no tubercular lesion or pulmonary weakness. There's not a sign of arthritis no broken or bent bones, no dislocated disks, no tattered tendons. Yet even as he labeled you Grade A a gremlin was tapping out the "Anvil Chorus" on the xylophone of your spine.

Somewhat truculently you may have replied to the doctor's good news with "But if I'm so perfect, *why do I ache?*" Certainly a fair enough question and an intelligent one. The human body struggling from all fours to an erect position may have had its primeval growing pains but once established in that position it was never intended that the achievement should be rewarded with aches. Nature evolved the human body to sit, stand, walk and make motions smoothly and

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comfortably when whole and sound Why then, when whole and sound, does it so often ache?

Years of guiding the exercise habits of men and women have shown me how right the medical profession is when it finds the human flesh heir to two classifications of aches *the physically-induced and the mentally-induced* To differentiate between the two is often as difficult as determining the sex of a chicken At certain stages of their development, they look alike and they act alike Fundamentally, however, there is a difference If you understand this difference you will know better how to start to free yourself from discomfort.

Let's look first at physically-induced aches

PHYSICALLY-INDUCED ACHES

One Monday after the first warm week-end of spring, one of my pupils arrived for his regular biweekly exercise period with a badly swollen, almost paralyzed right hand and arm The entire two-day week-end, he said, had been spent spading the garden, his right hand tightly gripping the top of the spade handle.

This is a rather extreme example of one of the most common causes of physically-induced aches: *habitual abuse of the aching area*

Now let me say very quickly that I have no quarrel with business men and women who indulge in this type of week-end sport It is quite understandable that any working person wants to make the best possible use of an all-too-short week-end, in his garden, on the tennis court, on the golf course But as we will see later, it is possible to engage in these activities without crippling one's self. In this particular case it is not entirely fair to call this maltreated hand an example of habitual abuse, for this gentleman did not spend every week-end spading his garden But it does illustrate one common form of abuse . . . *overuse of a particular part or particular area*

Having cajoled, scolded, pulled, and pushed man into an erect position, Mother Nature attempted to teach her creation how to operate his machine "Wall, stand and sit like this," she explained as she unrolled the blueprint "Use your arms this way, your back that way Use your legs like this and your shoulders, so Use your

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feet according to these directions And above all, *use your head*"

The blueprint, despite its age, is still legible, if we will only read it. But instead of using our heads, we continually *overuse* other sections of our bodies. The complexities of modern living must take much of the blame for this. It might even be that after aeons more of such complexities, evolution will decide that the old Model T human is due for a complete redesigning. In the meantime, it is up to us to keep the Model T rolling along without undue stress on any of its parts and without altering necessary daily routine.

Overuse of one body section is especially prevalent among men and women who work at mechanical jobs. Pulling a lever or pushing a pedal hour after hour continually exercises one muscle area while the rest of the body makes up a bored audience. One factory with which I am well acquainted has recognized the evils of this type work. At regular intervals it shifts its employees from one manufacturing process to another, thus lessening both physical and mental fatigue. Curiously enough this plant does not manufacture farm machinery, refrigerators, automobiles or any other "heavy industry" item, it turns out a well known brand of cough drops!

Obviously men and women whose work consists of mechanical tasks can't be expected to give up or change their jobs even though aches pursue them. Nor can we expect an early millennium when practical considerations will allow all factories to adopt the practice of the cough drop manufacturer. But any worker on a mechanical operation can help himself or herself counteract continual single-area strain. Supplementary exercises using the areas that remain idle during working hours, will turn the trick.

Mechanical workers are by no means the only people who continually overuse one part of the body. Many of my women pupils who complain of shoulder and arm aches do little or no real physical labor. But they are that insidious form of *mobile perpetuum* the persistent knitter or crocheter. Or they are housewives who carry the baby or heavy grocery bundles always on the same arm. Though these ordinary everyday activities may seem of little importance, they can harm us. Fortunately it's not difficult to do something about

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it once the unwitting victim realizes the cause of these nagging aches

Just our habitual positions of standing, walking, sitting or sleeping, if they are incorrect, can overuse muscles and thus abuse the body. They can also tilt the body out of normal balance, a second common form of ache-producing abuse. When unconsciously we throw our weight in the wrong direction or rest it on the wrong part of the body, we disturb the fine balance both of the body's framework and of everything contained within that framework.

The elusive backache can frequently be traced to unbalanced weight. Let the spinal column shift ever so slightly out of line and its delicate nerves send their SOS flying to all points of the compass. A school teacher was complaining of backache. Asked how she relaxed from her long periods of standing in the classroom, she replied, "Oh, I sit on the corner of the desk whenever I get a chance." I knew exactly what she meant, in fact I, too, have been guilty of the same kind of "relaxation". . . one buttock resting on the desk, the other off, and the whole weight of the body flung to one side.

Not long ago I called on a friend and found her busily patching blouses and dresses worn thin at the left shoulder blade. "I can't understand why all my clothes are wearing out in exactly that one spot," she fumed. Watch her sit and you'd understand. Her body invariably tilts left, left shoulder blade rubbing on the chair back while the right shoulder swings free. She should start mending her ways. Then she'd spend less time mending her clothes and, more important, avoid the aches that generally follow a continued unbalanced posture.

The clothes you wear, too, influence the balance of your body. Shoes frequently throw it off, especially if their heels tower too high for the wearer's framework and weight. Then the body's center of gravity drops too far forward. It alters not only the correct line of the spine but also the balance of the organs in the pelvic cavity. Many a woman has wondered these last few years why her dressmaker suddenly accused her of carrying one shoulder higher than the other. It could be coincidence that has made this happen to so many women I know, but it could also be—the shoulder bag. There is a

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tendency to hike the shoulder up so the bag strap won't slide off. Well, shoulder bags are both convenient and smart and we women are going to use them. The solution? It's simple. Alternate the shoulder on which the bag is carried. This, of course, is a minor point of body balance, but it illustrates two things—how quickly a minor habit can become a physical defect, and how easily many of these minor habits can be corrected once they are recognized as harmful.

Sharing with abuse the responsibility for many aches is something at the exactly opposite pole—*habitual pampering of muscles*.

School physiology classes teach what is too often forgotten in later life—the nutrition of muscles depends in a large part on their activity. You or someone you know may have had the experience of a long illness in bed. Unless you are completely myopic, the first time you got up and saw yourself in a full length mirror you were shocked. Who had substituted those pipestems for the handsome pair of legs you had taken to bed with you? Later, as your strength increased and your legs regained their normal use, they also regained their familiar beloved contours. Activity was again supplying the nutriment the leg muscles missed while you lay in bed. But you remember, too, don't you, that your legs tired easily at first and ached during their reconditioning?

A body need not be ill for its muscles to lose tone. Ordinary every day lackadaisical pampering and disuse will produce this condition. We all know what happens to the battery of our car when it lies idle for a long time. It gets low and grumbles mightily when we try to start the engine. Just so the tone of idle muscles lowers. Then, when suddenly called upon to start a motion, the muscles protest in no uncertain terms. That point is brought up now so you will understand why new aches may develop when you start the exercises recommended further on in this book. But as you read on you will understand that this protest is a temporary one and will soon subside into the contented purr of the smoothly running machine.

So if your aches are physically-induced—and you yourself should know whether they are—ask yourself two questions.

How am I abusing the aching area in my daily life?

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How am I pampering those areas?

When you have the answers, resolve to do something about it. Remember, you can always buy a new part for your car, your lathe, your washing machine or your lawn mower. But though modern science is performing wonders providing new body parts for worn-out ones the repair job is never as good as the part that came with the original chassis. Better, far, to keep those original parts oiled and polished as long as you want to use them. Which, of course, is all your life.

MENTALLY-INDUCED ACHES

But perhaps your aches aren't purely physically-induced. How can you tell if they aren't? A mental ache, conceived by fear or rage or wishful thinking, grows in the dark recesses of the imagination but is expressed in real physical travail. Yet almost any normally intelligent person can find the underlying cause if he will answer *absolutely honestly* these questions:

Do I, perhaps, WANT to ache? Is aching a sort of "escape mechanism" for me?

Am I continually in a stew over little things . . . tied up in knots from nervous tension . . . quick to anger or take umbrage?

Am I consciously or unconsciously afraid of or worrying about something?

Hardest to answer honestly is the first question—do I want to ache? It isn't a nice thing to admit, but you needn't confess it to anyone but yourself. (Your friends will already know it!) Turn out the lights so you won't have to look at yourself and go into conference.

When does that ache between the shoulder blades hit you most often? Isn't it those evenings when your wife suggests it would be nice to drive over and call on her Aunt Ellen and Uncle Joe? You never could stomach Uncle Joe's brand of cigars and his reminiscences of how he almost won the Purple Heart at St. Mihiel in 1918. As for Aunt Ellen—the way she's always telling you how you should prune your rose bushes.

Or do you notice the ache most when the boss asks you to work

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overtime typing a rush job? Surely he could have found some time during the day to give you the necessary instructions!

Aches provide a fine alibi for avoiding things we don't want to do. An aching back or shoulder or knee isn't serious enough to keep us home from the movies, but it comes in mighty handy when an unpleasant or previously unexperienced situation faces us. An ache can be turned on or off at will—for a time. But watch out. Eventually it becomes a habit and exists whether wanted or not. More people than will ever admit it have experienced the active nausea or diarrhea that accompanies anticipation of a task that is new and therefore alarming. One of my pupils says that each time she changes her job, she must get up at least an hour earlier on the starting morning to allow time for taking care of her "first day diarrhea." Aches are less obvious protests against life's annoyances, but they are also more enduring.

Continual nervous tension produces physical aches just as surely as overuse of one's muscles. Fashionably we toss off the term *nervous tension* with a quip about an "occupational disease" of this modern age. So it is, but we moderns must live in our age. We can live in it less painfully if we learn to control this occupational disease.

Muscles have nerves. If they had not, they could not contract and start motions. When the nerves are active, so are muscles. Anything that acts on nerves reacts eventually on muscles. If they contract too often, the ache of fatigue sets in.

No matter how relaxed and free from stewing you think you are, watch for these tell tale signals. Do you jingle the coins in your pocket? Do you frown or wrinkle your forehead when you talk? Do you frequently shift your body when sitting? How often do you realize your teeth or fists are tightly clenched? Are you continually sitting on the edge of your chair—literally as well as figuratively? These and scores of other little sign posts point to muscles in an over active state from nervous tension. They also warn of uncomfortable times ahead if not already here. But once recognized for what they are they become controllable.

What are you afraid of? Losing your job? Your sex life? Middle

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age? Cancer or heart disease? A business woman just turned forty was sent to me by her physician with the plea, "See if you can do anything for her. She hasn't a thing the matter with her, but she's always coming to me with a new ache, convinced that it means a disease. I don't believe she's quite in need of a psychiatrist but she will be if she goes on this way." I worked with that woman for six weeks, three times a week. She came reluctantly at first, for she was fearful lest exercise increase her pains. For the first two weeks she brought to each lesson a new and mysterious ache and warned me not to give her exercise that would involve the aching area. Our conversations developed that she nursed a morbid fear that a crippling disease would force her to give up her work. And she needed her job to help support an invalid mother.

Her posture was poor. Her work required her to spend long periods bent over books on a desk. It was obvious that nervous fears and physical strain had combined to bruise her body until it actively protested. Of course her exercises did touch the aching areas, though she was unaware of it until she admitted that her aches were decreasing. Only then was it revealed that all along she had been exercising her aching parts and despite that exercise they ached less. She flared up for a moment, but luckily she was by no means a stupid person. Convinced that her fears of exercise were groundless, she entered into her routine with hearty cooperation. At the end of six weeks her muscles were stronger, her circulation stimulated, her nerves relaxed. Best of all she had discovered the truth of her doctor's diagnosis—there was actually nothing wrong with her physical being that her mind couldn't cure. Once again a confident, effective person, she was then able to carry on her exercise routine by herself at home.

But you aren't a mental acher. You have answered the questions honestly and know your discomforts are physically-induced. *Or are they?* Aches have a way with them, an insinuating way. Like the dampness that "gets into the bones," physical aches slither into the mind and mentally-induced aches burrow a mordant path into the muscles. An increasing ache from overuse or disuse of muscles—and down goes the morale. You start worrying over the state of your

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physical union—is it falling apart? In the dark of the night the goblins gather about your bedside and confer in hushed tones on deadly diseases. You toss. You turn. You try to relax with a cigarette or a medical dictionary. Comes morning and you ache worse than ever.

Where is the beginning and where the end of a circle? This book takes the physically induced aches as the beginning. It will consider various types of aches and achers and how their discomfort can be lessened without changing necessary activities or way of life. But to complete the full 360 degrees of the circle, it will also recognize the mental aches, their causes and the end results that blend so smoothly and poisonously into the physical being. Only when you can look yourself straight in the eye and admit that perhaps some of your aches are mentally induced will you get the full benefit of the physical program this book emphasizes.

MENTAL POSTURE

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INCORRECT POSTURE, AS YOU WILL LEARN LATER, HEADS THE LIST OF specific causes of physically-induced aches, but incorrect mental posture can defeat any attempt to attain correct physical posture

Nature certainly intended us to be happy, peaceful individuals, loving and being loved Tradition has it that only when Adam and Eve ate of the forbidden fruit and Pandora opened the closed box did other less desirable emotions sneak into our bosoms Be that as it may, most of us were born with good mental posture and we cooed contentedly in our cradles and lavished only love upon our neighbors for some time thereafter

Had it been intended that we should experience anger, fear, hate, despair, jealousy and the many other disturbing emotions, it is doubtful if hypertension would be what doctors say is one of the most vicious ailments of this modern world If it had been so intended, our bodies would have been constructed differently in order that we might withstand the ravages of these disturbances

Hypertension is the condition where blood pressure remains constantly above normal Doctors agree that unpleasant emotional disturbances are one of its chief causes Emotional stress constricts the small arteries, then the heart must pump harder to force the blood through Hypertension affects the kidneys as well as the heart, and it can cause arteriosclerosis, uremia and cerebral hemorrhage Less damaging but more common results are aches.

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Not all emotional tempests develop into hypertension, of course. It is cited as one example of the extremities to which poor mental posture can lead us.

Now I am not an M.D. or a psychologist. But one cannot work for a long period in close association with people and fail to observe some of the behavior patterns and the mental and physical reactions recognized by the medical and psychological professions. It is said that many a hairdresser knows more about his or her clients' troubles than do their doctors, for the hairdresser seems to be regarded as a father or mother confessor. Often I find myself in a similar position. Almost every day as I guide my pupils through their exercise periods, intimate secrets are revealed to me. Most of them I'd prefer not to hear except for one reason. Knowing such things often makes clearer the type of exercise routine on which the pupil will thrive best. If, for example, a person reveals emotional disturbance and tension, I know that at least part of the aches of which they complain are probably mentally induced and that more time must be spent teaching that person to relax.

For years my own observations have been telling me that it is almost impossible to be disturbed in the mind without being disturbed in the body. Modern scientific studies bear this out. We have heard much of late about psychosomatic medicine. Magazines and books, both scientific and popular, have presented this subject with such clarity and thoroughness that any reading person can scarcely be unaware of its significance. It is not a new theory. Many doctors have long been treating patients by psychosomatic techniques. Even the ancient Romans had a phrase for it: *mens sana in corpore sano*—a sound mind in a sound body.

Psychosomatic techniques are predicated on the close connection between the *mens sana* and the *corpore sano* and the theory that emotional disturbances are the prime factor in many of our physical ills. These disturbances may be found either in the immediate history of the patient or have occurred many years before the physical ailment appears—during childhood, in fact. They affect a person in two ways: real pain or real disease symptoms may be experienced in body

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parts that are actually sound, or a real change in the structure of the affected part may occur

In treating with psychosomatic techniques, the physician works with his patient's mind as well as with his body. He treats not only the disease but also its underlying cause.

You must do the same if your aches are mentally induced . . . the result of emotional disturbances.

Admittedly that is easier to say than to do.

Only a trained psychiatrist has any right to tackle the subject of early childhood fears or troubles. Therefore this chapter will discuss only such present emotional disturbances as you can put a finger on and say, "This is it. I recognize it. I don't like it. I don't want it."

Here are a dozen questions to cue you in recognizing the symptoms.

Do you pitch headfirst into a discussion and turn it into an argument?

Do you emphasize your ordinary conversations with needless hand and facial gestures and italicize every other word?

Do you generally have a sandwich sent in and eat lunch at your desk because you simply can't spare the time to go out?

Do you jealously guard every little detail of your job and resent it if one is taken from you and given to someone else?

Does a small and unintentional mistake by your secretary make you see red?

Does a sharp retort by a customer or fellow worker urge you to go him one better?

Do you resent it when someone else gets a raise and you don't?

Do you sigh and fume and wiggle and twitch when you have to queue up for a ticket?

Are you sure when he doesn't call at the appointed hour that he's out with somebody else?

Are you always certain you're always right?

Do you just want to slay the office boy because he's always whistling under his breath?

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Are you always worrying about your bills, your job, your children, your popularity, your deadline, your tomorrow?

These should give you an idea of the sort of emotional disturbances that tie the nerves in double bow knots

How do these mental postures make us ache? We are all familiar with certain obvious physical reactions to our emotional states. We blush when embarrassed or shamed. We sweat and sometimes faint, when frightened. We cry when our feelings are hurt or when we are angry. Is it, then, a phenomenon that rage or fear or jealousy should make our muscles sore?

Actually it is no more of a phenomenon than any other bodily performance. Any unpleasant emotional disturbance affects the sympathetic nervous system. This is the system that makes the pupils of our eyes dilate, the sweat glands pour out their liquid, the heart beat faster and increase the pressure of the blood. One outburst of anger flashing through the sympathetic nervous system can send the blood pressure up 40, 50 or even more points in almost the wink of an eye. A constantly upset emotional state keeps the sympathetic nervous system constantly stimulated. Constantly stimulated nerves cause constantly contracting muscles. Constant contraction produces muscle fatigue and soreness. It's as simple and Q.E.D. as that.

Or look at it this way. In unpleasant emotional states the secretion of the adrenal capsules increases greatly. This secretion causes a breakdown of the glycogen content of muscles. When glycogen breaks down, lactic acid forms. As lactic acid increases, muscles lose some of their ability to relax. A continued production of lactic acid such as occurs when one is continually upset emotionally allows muscles no rest. So they ache.

That, reduced to the simplest of terms, is the physical explanation of why that shoulder blade ache hits you only when your wife suggests calling on her relatives, why the back-of-the-neck ache strikes when the boss requests overtime work, why you "ache all over" when you fear what may happen tomorrow or worry about what happened yesterday.

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There is a remedy for it, if you are endowed with intestinal fortitude. It will not be a quick one, for the disease is not one that strikes quickly. Oh, your physical manifestation of it may have happened suddenly. When the body aches, you know it at once: but when the mind aches you may not realize it for weeks or months. Or never unless you are honest enough to view yourself critically. You can keep that emotional ache hidden in a dingy corner of your mind until it is covered with slime and crawling with maggots. And soon thereafter folk will be saying "What a shame! He wasn't too bad a guy. Wonder if they'll ever be able to let him out?"

You probably know someone like this executive. He has recently been told that his blood pressure is dangerously high and his heart has started to enlarge. If you met him he'd soon tell you about it, for he enjoys being the center of attention. After he'd told you he'd add, "Neither my doctor nor I can understand why. I stay home nights go to bed early during the week, don't drink much except week-ends and certainly don't work too hard." What the doctor doesn't know is that in his office and his home this man talks continually and with gestures. If he has nothing worthwhile to say, he talks foolishness. He never sits quietly to read or think. His average in personal secretaries is three different ones a year; they leave because their tiniest mistake meets with sarcasm purposely pronounced in loud tones so all may hear. Any lesser executive who happens to disagree with him in conference finds himself faced with dilated eyes, an apoplectic skin and a tightly drawn mouth that opens to emit a volley of scorn. Because he is satisfied that he is smarter and wittier than most of his business associates and social acquaintances it will always remain a mystery to this man why he has now been forced to cut down on smoking, drinking and the vigorous outdoor exercise that he really enjoyed.

So don't hide the ache in your mind. Take out any little peeve and panic, each suspicion and sorrow, every worry and woe. Put them in the middle of the room under a good strong light and dust them off so you can look them over carefully. Do you really think they're worth keeping? Haven't they outlived their usefulness if indeed they

MENTAL POSTURE

ever had any? Can't you make better use of the space they occupy?

There's a fifty year-old woman, a department head in a metropolitan store, to whom you should talk. She did exactly that with the ache in her mind. Her physician phoned about her one day "The thing that's wrong with her," he said, "isn't physical, and I've told her so. She must learn to relax. See if you can teach her." She came to my studio the next day and required no prodding to open up "You can see what a mess I am," she began. "I'm about fifty pounds overweight. I can't remember the last time I had a really good night's sleep. I ache from the top of my head to the soles of my feet. Eight months ago I had a hysterectomy and you'd think I'd lose some of this weight after that, wouldn't you? Not me, it piled right back on the minute I got back on my feet. Dr. ——— tells me that he can't find a sign of anything physically wrong with me except this weight and says the whole thing is mental. I was mad at him but he's been my doctor for a long time and ought to know me, so last night I kind of took stock of myself and I'm going to tell you everything."

She talked for over an hour, revealing that two years previous she had fallen in love with a man who though outwardly charming was really a thoughtless selfish creature. At first she had believed his intentions were serious. Later she began to doubt and for some time had been quite sure he had no intention of tying himself up in marriage. Though convinced of this she could not force herself to accept it. Her emotions, upset at first by her doubts, became more and more disturbed as the man's careless treatment of her induced one scene after another. After each emotional upset her only solace was in eating rich and sweet foods. Now in addition to her love worries she was beset by the fear that her constantly increasing weight and its effect on her appearance might lead to loss of her job.

"Well, that's it," she concluded. "Dr. ——— says you may be able to help me. If you can't I'm sunk, because he told me the next step will be psychiatric treatment and I'm really scared. I'm scared of exercise, too, because already I ache so much."

She was first given the same set of simple relaxing exercises you'll find in Chapter 19 so she would understand the difference between

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tense and relaxed muscles. Those were followed by a very mild routine and by instructions for what she was to do at home between visits. Two days later she came back, surprised to find that her aches had not increased and that she had slept a little better than usual. After three or four studio visits and a conversation with her physician, the subject of a reducing diet was introduced. "I can't promise that I'll stick to it," she said honestly, "but I'll really try." That evidence of cooperation was all the assurance I needed to know she would come through all right. And she did. Each time she came, we talked . . . or at least she did . . . until I knew more about her than about my own sister. Opening up her mind and pulling her little fears and worries into the sunlight helped dissolve her tension. Of course her reestablishment in normality was a lengthy process but eventually she lost her extra fifty pounds and her nagging fears. This all happened three years ago and she is still with her same firm but has graduated to a bigger position. She still sees the charming, selfish man, too. No, they haven't married and they never will. She no longer wants to.

The first thing to do, then, is to take stock . . . to ask yourself what are the ache-inducing emotions. Fear? Jealousy? Anger? Boredom? Even boredom can make you ache, it's a most unpleasant emotion.

Then. What are the situations that give rise to these emotions? And can you avoid these situations? If not, can you change or lessen them?

If you can, that is the second step. But suppose you can't. Then learn to relax the muscular contractions that go with such emotional disturbances. When you begin to feel the tumult of anger, for instance, let yourself go limp all over. It is physically impossible to be both limp and angry at the same time. Anger cannot exist save in a state of tenseness. Try it and see. If you don't recognize the difference between tense and relaxed muscles, turn to Chapter 19, where you will find six simple demonstrations of this difference. Relaxation is the first thing to learn if you would avoid the tensions that produce aches. You must learn it well enough, too, to practice it not only the

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moment your unpleasant emotions begin to steam, but long before, and at all times.

A prominent architect whose name you would recognize comes regularly to my exercise studio because he is continually in conference in his office with clients who seem to think they know more about buildings than he does. He says the hour of exercise and relaxing practice two or three times a week is the only thing that keeps him thinking clearly and quickly and prevents him "blowing his top" at his unruly clients.

Exercise can help you become stronger than your unpleasant emotions. Scientific studies in the effect of emotions have shown that if a frustrated person can go from the frustrating situation into one requiring a rapid expenditure of energy, his unpleasant emotions are replaced by more pleasant ones. A simple example that all of us have seen is the person who, following a quarrel, grabs his hat, mutters "I'm going out for a walk," slams the door and stomps out of the house. And we have all seen small children who, when crossed in their desires, throw themselves on the floor shrieking and pounding their heels, only to arise seconds later with the smile of an angel on their lips.

A perfect demonstration of this reaction happened in one of my late afternoon classes. The pupil, a young newspaper woman, arrived announcing she had a splitting headache, had had a ghastly day at the office, couldn't take her boss's insults any longer and was going to resign her job the next morning. She started in on the regular class routine of warming up exercise followed by increasingly vigorous ones. After a half hour she suddenly rose from her exercise mat, went to the telephone in the next room, called her boss and apologized for the ill temper she had displayed in the afternoon. She returned to her mat, finished the routine and said in surprised tones as she left, "My headache's all gone."

Exercise is not offered as a panacea for all mentally induced aches. In fact, it would probably not be of any great help to persons with deeply hidden emotions or those whose emotional disturbances lie so far in their background as to be unrecognizable unless those people

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are also receiving the assistance of a psychiatrist. But it will certainly do them no harm unless the emotions and tensions are of such intensity that they have caused actual disease in some organ.

For the one who is not actively ill but merely nervously tense from emotional effect, exercise will help, provided his mental posture toward the exercise is correct. It is absolutely imperative that the person have a real desire to help himself and that he approach his exercise in a cooperative spirit. When a mother asks me, "Can you correct my child's posture?" I have to reply, "Does your child want his posture corrected? Or is it only that you want correct posture for your child?" For although the child can be put through exercise routines that will strengthen his muscles and teach him the correct disposition of body parts, I cannot force him to maintain that posture any longer than it takes him to shout good-bye and run for the elevator.

At one time I had as posture-correction pupils two fourteen-year-old girls. Mary A. had an intelligent mother. She had talked over with her daughter the reasons why good posture is important. She had elaborated on the social and charm angles as well as on the physiological, and the child came to me with a real understanding of why she was there.

The mother of Mary B. showed less wisdom. After months of nagging to "Straighten your shoulders! You're a disgrace!" she plumped her daughter into a taxicab and deposited her at my studio. "I'm ashamed to be seen with her," she told me in the girl's hearing. "I want you to make her stand up."

Mary A. improved quickly and her mother did not spare her compliments. Mary B. did fairly well—in the studio, but her mother phoned me every week to complain that she simply could not get her daughter to practice at home what she had learned. These girls are now twenty-four years old. Mary A. stands and walks like the spirit of joy. I see her often for she lives near by. Mary B. moves with the sagging shoulders and forward-thrust head that bespeak the body propelled by a dejected, trouble-filled mind.

If the desire for improvement does not exist, nothing in this world

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or the next can help a person rid himself of aches and pains. There is a man who in college made a brilliant academic and athletic record. He entered a brokerage business in the late twenties and during the trying days of the Great Depression attempted to solace his worries with late and riotous parties in smoke-filled, alcohol perfumed rooms. He developed into a chain smoker chain-drinker, and these habits persisted. Today he is a victim of sinus trouble, lower back aches and painful mediotalar arches. He seethes with little angers and becomes choleric at the drop of a bridge card, for bridge is now his favorite form of athletics. His week-ends and vacations continue his city existence. He prefers to sit and read a detective story or play bridge with a highball at his elbow than to walk to the door to see a sunset or across the road to smell the freshly cut sweet-grass. He bores his acquaintances with recitals of his aches and pains and brands his doctor as unsympathetic and stupid because he prescribes fresh air, exercise and a diet of food instead of alcohol and nicotine.

Don't I beg of you, approach your exercise plan with a feeling of distaste or reluctance or indifference. You may not be able to anticipate it with the same enthusiasm you have for the première of a new Broadway musical but at least leave your mind open and free of preconceived notions about it. Give it a fair chance.

I once visited a friend in the hospital the day after she had undergone a most serious operation. While there her physician dropped in to inspect her chart. He shook his head in bewildered fashion. "I can't understand it," he said. "After all we did to you yesterday and there isn't a single reaction on your chart, not even a temperature." The patient grinned up at him implacably. If weakly "Doctor, she replied, "it's a clear case of clean living and right thinking."

Humorously said or not, it struck me that there was much in the patient's quip. As to the clean living part, I have no comment, but the right thinking part was something else. The patient had never been an unnecessary worrier. She had never had any fear of death. She trusted her physician implicitly. She had had only fifteen minutes warning of her impending emergency operation and when she went to the operating room she had had a good night's rest. Sedatives had

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seen to that She was free of the nervous tensions that would have filled a frightened, rebellious patient Moreover she made up her mind she was going to get well—and but quick So she did

Anyone beset by poor mental posture might well heed the prophecy of Dr Flanders Dunbar, instructor in psychiatry at the College of Physicians and Surgeons of Columbia University and in charge of psychosomatic research at the Presbyterian Hospital She says

“Some day . . . children will be taught how to mind their bodies, and their bodies will learn to mind them—that is, stay well . . . When that time comes, the teachers will find that they will have to mingle the new with the old They will take the concept of the sound mind in the sound body from the Romans But they will go back even further for some of the ways to achieve it They will recall that it was Hippocrates who observed that the physician only applies the splint, nature heals the broken bone They will explain that, since the mind and body are one and indivisible, the same principle holds true in healing the breaks in human emotional fabric They will teach that your mind is your body and vice versa ”¹

¹ Flanders Dunbar, M.D., *Mind and Body Psychosomatic Medicine* (New York Random House, 1947), p 260

HERE'S LOOKING AT YOU!

3

AT NO MOMENT OF OUR LIVES CAN WE CEASE USING OUR MUSCLES. We must use them for instance, to maintain blood circulation or to digest our food. Over such muscles as these we have no control. We cannot tell our heart muscles to beat faster and have them obey. Over other muscles we do have control. We can order our leg muscles to work faster when we want to run. When they obey, then the heart muscles will automatically work harder.

It is the voluntary muscles those which we can command, with which we are concerned in this book. They are the ones attached to bones and that both move those bones and hold them in place. They are more important than the bones themselves. Were it not for them, bones would go kerplunk when we stand up. All told our muscles make up more of the weight of the body than any other single constituent. If you are a man tipping the scales at 150, your bones weigh only 28 pounds. But your muscles weigh more than twice that—62 pounds. Your blood accounts for 12 and your viscera, skin and fat for the remaining 48.

In order to move the body's bony framework a muscle must contract. In contraction the muscle ends pull toward each other. Muscles never push a bone into action. They work somewhat like the strings of a puppet—the puppeteer pulls the strings to start motion in the figure and releases those strings to let the various parts return to position. Warmth assists the process of contraction; cold impedes it. That is why it is generally wise to enter any activity slowly. It is

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why gentler exercises will come first in the exercise routines given here. A period of warming up is good for your muscles.

If muscles are to perform efficiently, they must have what physiologists call *tonus*. You have heard this referred to colloquially as "tone." A healthy well-nourished muscle feels firm to touch, that is tonus. An unhealthy undernourished muscle feels flabby and soft, that is lack of tonus. To maintain tonus, muscles must be used, for it is activity that gives them nutriment. When tonus is maintained, muscles perform cheerfully. Muscles lacking tonus will respond to the work whistle in a most disgruntled mood.

To stand up, sit still, walk about or perform any operation involving movement of a body part, the brain must give commands to large groups of voluntary muscles. Whether the command is a good one or a bad one, the muscles, like soldiers, must obey. "Theirs not to reason why, theirs but to do and die." And most of our aches result from muscles obeying bad commands—doing and dying.

Muscles, like the people they are in, come in certain lengths. They have the power of contracting and growing shorter. That's how they move bones, by pulling. Though muscles can contract, they cannot expand voluntarily, but they can be stretched against their will. That happens when a bone or set of bones is constantly out of its proper place. For example, shoulders. When they droop forward, they drag at the back muscles and stretch them. It's the equivalent of that fine form of mediaeval torture—stretching a man on the rack.

This brings us to a subject which I approach with considerable trepidation. . . posture. The word sounds deadly dull. Since childhood it has been dinned into your ears. One of my own earliest memories recalls my grandmother telling how her mother forced her to walk with a book atop her head to improve her posture . . . or "carriage" as it was then called. (Incidentally, though this sort of tale seems to be common enough about girls of my grandmother's generation, never once have I heard it about a boy. I wonder why?) No one can be blamed who reacts with, "So this is just another of those 'push your shoulders back and stick your nose in the air' lectures. Nuts to that!"

HERE'S LOOKING AT YOU!

Be assured that it isn't. Never will it be suggested that you "push" your shoulders back. Nor shall I claim that correct posture will miraculously cure your aches. On the contrary, it probably won't. You will have to be prepared to do more than stand straight if you have aches to dispose of. But I will say—and unequivocally—that most physically induced aches trace their ancestry straight back to the bad commands that produce poor posture. This in no way contradicts the premise of Chapter 1, that physically induced aches result from overuse or pampering of muscles. Both are the end results of poor posture and poor posture results from both.

But first we should understand what is meant by posture and what are its components. The definition I like best is from the Funk & Wagnalls New College Standard Dictionary, "the visible disposition *either natural or assumed* of the several parts of a material thing especially of a living thing with reference to each other." The italics are mine and emphasize why I like this definition.

Thus "posture," translated, means all the attitudes one takes when he stands, sits, walks or engages in any of life's work or play. The *natural* disposition of our parts in these activities makes for good posture. That is to say, when we stand, sit, walk, work and play using our parts as nature intended, our posture is good and our body comfortable. It is when we *assume* unnatural dispositions of those parts that posture becomes poor. Then it is, too, that aches and pains start.

It is easier to understand what is natural and what assumed if we understand a little about body construction. It is all very well to say that the natural method of lifting puts the burden on the shoulders while the assumed posture puts it on the lower back. But the natural response to such a statement would be, "Why? It is easy to understand why when you know that the bones of the shoulders form a shape similar to the wooden yoke worn on the shoulders by men of many lands for transporting heavy loads. For this reason succeeding chapters that deal with various body areas and their aches include the basic construction details of that area. But before going into those, let's clear up the details of correct basic posture: the natural disposition of your parts when you are standing, sitting or walking.

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about For the time being you must accept these details without their "reasons why " Those will be made clear to you when we take up the separate body parts

There are as many kinds of poor posture as there are people But there is only one kind of good posture and that is the natural disposition of the body parts in performing an action So let's forget all about poor posture and concentrate on the good Because you usually meet new people for the first time standing, and it's first impressions that count, we'll start with correct standing posture.

WHEN YOU STAND

This book should have attached to it a three-panel full-length mirror There's no better detective for tracing whatsdunit Barring possession of one, place an ordinary full-length mirror so there's space to walk back and forth before it Arm yourself with a hand mirror large enough so you can spy on all sides of yourself

Walk up to the long mirror without any effort to look proper or prepossessing Stop a few feet away from it Just pretend you're looking in a shop window or waiting for a trolley car Take an unprejudiced analytical view of yourself

Here's a check list of the most common standing posture faults How many of them have you? (Play fair, now!)

- 1 Weight on one foot and hip jutting out——
- 2 Knees pushed back so calves bulge——
- 3 Abdomen protruding and sinking——
- 4 Buttocks shoving out in the rear——
- 5 Chest hollow and dejected——
- 6 Shoulders slumping——
- 7 Head thrust forward——

If you checked even one of those faults, it's reason enough for an ache somewhere Repeat that fault every day and you put strain where nature never intended strain to be Those postures don't go with the natural disposition of your body parts when erect So let's remove that strain by standing as nature intended Like this

HERE'S LOOKING AT YOU!



- 1 *It right on both feet* Try to feel it hanging directly over the ankle bones, rolling slightly to the out side border of each foot. (You'll find out why when we get to the construction of the foot.)
- 2 *Feet pointing straight ahead* Keep them parallel or with one foot slightly ahead. Six to eight inches apart gives a good base both for supporting your weight and presenting a pleasing appearance.
- 3 *Knees slightly relaxed* Not really bent just easy. Automatically those tense bulging calves will straighten.
- 4 *Abdomen pulled in and up* Watch the mirror when you do this. See what it does to your whole body? The chest lifts to its proper position. Shoulders start swinging back.
- 5 *Buttocks tucked in* You can't do this by pushing knees and abdomen forward. It's purely a matter of muscle control. Just imagine you're a mattress and bedclothes are being tucked around you, firming the edge. It's difficult on first try.
- 6 *Shoulders back but relaxed* Watch the mirror again. Between your shoulder blades lie muscles. Use them to *pull* back your shoulders. Held by these muscles, shoulders never look tensely forced back. You may not be able to do it at first you must get the feeling. It's something like learning the schoolboy trick of wiggling your ears. It can't be learned by grasping the ears with the hands and moving them. Only a concentrating mind can grasp the ear or shoulder muscles and will them into motion.
- 7 *Head erect from end of spine* Pretend you are a Sir Walter Raleigh or a Queen Elizabeth wearing the stuffy starched ruff of their era. Then you can scarcely avoid carrying your head correctly. Think of this ruff every time you catch your head jutting out from the 7th cervical vertebra. (See diagram on page 44.)

So there you are before your mirror each part of your body in its natural, intended disposition

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with reference to every other part. And even without second sight I know you're stiff as a wooden soldier. Relax! You can still breathe, move your arms, turn your head. In fact, when posture is correct, it's easier to breathe, or to digest your food—easier for all the vital organs to perform their functions. Correct posture gives them room to work and places them where they can work most efficiently.

The Plumb Line

So—though you may feel awful for the moment, you look wonderful standing there before your mirror. As you are, a surveyor could drop a plumb line from a point above the shoulder joint and opposite the ear, straight down through shoulder and hip joints, along the outside of the knee joint and through the ankle bone. (See illustration page 27.) That imaginary plumb line indicates that your body is in balance. If the line isn't plumb but staggers you've thrown your weight too forward or back, too much to the right or to the left. Keep this plumb line tucked in a corner of your consciousness. You're going to need it in practically every chapter. It's handy, too, to bring out and use whenever you pass a mirror or reflecting window.

WHEN YOU WALK

Put standing in motion and you have correct walking posture. The mechanics of walking are explained in Chapter 14. Right now the really important thing is to understand how the body is held when you apply them. One warning for when you do—keep a firm leash on abdomen and head. Don't let them rush ahead of the rest of you. They can't start anything till your other parts arrive, too!

WHEN YOU SIT

In standing, weight rests on the feet. In sitting it rests, or should rest, on the buttocks. *Not* on the thighs or the lower back. It should rest on the buttocks fairly and squarely, no matter on what you sit—chairs, stools, auto seats, sofas, even on laps. But a predilection for sitting on fence rails, chair arms or desk corners will make this disposition of your weight difficult.

HERE'S LOOKING AT YOU!

Feet rest flat on the floor—the entire foot, not just the ball. Don't roll those bones of the ankle either in or out.

Knees should relax. They will if feet are correctly placed, they won't if only the toes touch. If you believe knee-crossing gives that man-of-distinction air, be advised that continued indulgence in this attitude also tends to slow up circulation and create tensions around the knee joints.

Pull the *abdomen* in and up. Despite what you are thinking, you will be more comfortable this way when you are used to it. Your trouser belt or your girdle top won't cut into you the way it does now.

Pull the *shoulders* back with the between-the-shoulder blades muscles. Keep them relaxed and unhunched. Imagine a long slanting line from ear to shoulder joint. Be especially stern about any tendency to a forward droop. In sitting the very weight of the arms as they rest on the lap or hold a magazine tends to pull undisciplined shoulders forward.

Pull up the *spine* and keep the *head* erect, just as when you stand. Don't you honestly think you look better that way than when you're squashed down like a melting mound of ice cream?

PARDON ME—YOUR STATE OF MIND IS SHOWING!

You should understand now what you should look like when an instruction reads "Do this with straight back" or "Be sure the shoulders are relaxed" or "Do so-and-so with body in balance" and so on.

Standing, sitting and walking comprise the three basic and most used postures of daily living. All other postures stem from them. Everything we do at work or play includes one or more of them. The only other single important posture is the lying down one and because it is so patently not a part of our active life, it is discussed in Chapter 18, on sleep.

People often call me a fussbudget about posture. I am, and for



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good reasons, not all of which are purely physical. Aesthetically, for instance, everyone prefers good posture. There isn't one of us who wouldn't choose to look at "a fine upstanding figure of a man" (or a woman) rather than at a bent and bowed creature full of humps and bumps.

Posture, so it seems to me, indicates a state of mind. Everyone is familiar with the sagging, loose look a body assumes when its owner is discouraged, unhappy, beset by worries or in ill-health. When you meet a person whose body has that look, you at once put him down as a discouraged, unhappy or worried person, one lacking the mental stamina to rise above his situation. *Perhaps he isn't that kind of person at all.* But that is your first impression . . . the impression that is most apt to count. It is a fact, too, that persons of low intelligence very often stumble about with shoulders sagging and head thrust forward. Not all of them, of course, any more than you could say all persons walking that way have low intelligence quotas. As we all know, the brilliant but absent-minded professor is usually cartooned with just that sort of posture.

As a rule, good posture identifies itself with an alert, clear thinking mentality, one that meets life's ups and downs with courage and energy. When a man or woman comes to me with poor posture and asks to have it corrected, it gratifies me immensely. The desire for correction indicates a healthy state of mind.

But aside from all this, I admit to being fussy on this subject because I know how many unnecessary ills and aches poor posture sires. Nature had a functional reason for the design of each body part. The chest cavity was built like a barrel and protectively hooped by the ribs. The organs in that cavity need room for expansion so they can suck in life-giving oxygen and blow out poisonous carbon dioxide. No pressure was to be allowed on these organs to crowd them and limit their functioning. When our shoulders stay back where they belong, our lungs work in ample space. When shoulders sag, lungs are crowded and their expansion limited.

The wide, flaring pelvic girdle was shaped to carry its sensitive organs tenderly as we would carry something precious in our two

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hands. When abdominal muscles sag, abdominal organs push on these delicate pelvic viscera and interfere with their efficiency. That is one of the reasons why in all postures the rule is "abdomen held in and up."

Poor posture results such as these are more serious than an ache, though not as immediately noticeable. But both these and aches are unnecessary. When our various parts fail to remain in their natural relation to each other, strain falls on muscles not intended to bear the unnatural burden. Correct posture puts no undue strain on any muscles. Is this hard to understand? Do you wonder, for example, why your thighs will ache if you continuously sit in a chair with your weight forward, yet your buttocks don't ache when you sit with your weight on them? It is because thigh muscles are not constructed to carry your sitting weight. They are not chunky, cushion like muscles as are buttocks muscles. They are thin, string like bands built to assist leg motion. To maintain your sitting weight they must work every moment to accomplish something for which they were not designed. They were correctly engineered but the machine is being operated wrong. Buttocks muscles, on the contrary, were designed for the purpose of bearing your sitting weight and no strain is put on them when they do so.

In correct posture, whether standing, sitting or using a tool, muscles constructed to do certain things do them. In incorrect posture muscles not so constructed must do the job. It is as though you sewed sail canvas with a needle sized for chiffon thin fabric, or employed a carpet tack where a flooring nail is needed. The needle or tack would bend or break. Fortunately your muscles won't break but they are put under such stress that they tell of your error in a way just as effective—by aching.

If your basic postures are incorrect, you should try to correct them at the same time you are doing the special or general exercise routines. Don't wait until you feel you've strengthened your muscles sufficiently. Correct posture in itself is an exercise and one you can practice in public without feeling conspicuous.

NOW IS THE TIME

4

YOU HAVE VISITED YOUR DOCTOR AND PROCURED HIS BLESSING ON your plan to exercise (If you haven't, please do so before you try a single one of the exercises described in this book) Since you are whole and sound, exercise can help free you from your physically-induced aches by eliminating their causes

That goes even at your age, whatever it is So many middle-aged men and women ask, "Can I really start exercising at this age?" When that happens I am reminded of the remark once made by a dear old gentleman in his eighties, still a featured performer in the annual show of a skating club "Anyone can learn to skate," he said, "but it's a good idea to get started by the time you are seventy "

That is just as true of exercise The earlier one starts, the better Yet muscles can be strengthened and limberized even when so incapacitated they can scarcely be moved Like any physical skill, exercising comes easier if you have habituated yourself to it when young It is said that once you've learned to ride a bicycle you can always ride one though many years may pass between one ride and the next You may not feel as sure of yourself as you did years ago you may need to hold on to the handle bars instead of whooping, "Lookee! No hands!" But the art of balancing yourself astride a two-wheeled conveyance remains

So with the use of muscles in sitting, standing, walking Correct early habits can be regained without too much difficulty New habits can also be formed My oldest student was eighty-four when she first

NOW IS THE TIME

came to me, others have been in their fifties and sixties I have recently been working with a woman in the early eighties who was just out of bed from an attack of bronchitis and filled with both aches and angers. Her housekeeper was on the point of leaving "that crotchety old witch," as she called her employer. Her family studiously avoided falling under her gaze. Beginning with a very mild series of exercises in three weeks she had reached the point where her routine was activating all the muscles of her body. Their arousal improved her faulty digestion and elimination. As she began to function normally, her disposition mellowed. She smiled instead of scowled when she greeted the housekeeper and family. Peace and contentment once more spread their wings over the household.

No, age is no excuse for not trying to free one's self of aches.

It is not at all strange that the more we ache the more we are convinced we should be inactive. The human race has experienced enough pain to shy away from more. Fear of pain sets up a mental block that prevents many a person from taking the means of eliminating aches. But judicious exercise need not create pain while it is whipping up circulation and relaxing tense muscles. Many modern specialists in arthritis now believe in movement as part of the treatment for the affected areas.

Most people, many physicians state fall heir in their forties to a certain degree of arthritic pain and deposits but doctors do not advise such persons to cease being active. How many mornings do you get up feeling stiff and sore in some of your joints? Plenty, if you have passed forty. But you don't crawl back into bed because of it, do you? No, you go about your work, muttering perhaps till suddenly the ache is no longer there.

A few months ago a physician sent to me a woman of forty odd. Her medical history noted an arthritic back plus a siege of pneumonia and pleurisy two months previous. Her body was racked with aches, her mind crawled with fears and discouragement. After a month's routine of mild exercise and relaxation she was able to resume a part-time position in a shop and do most of her own housework.

She was not an easy case. She made no bones about saying she knew

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exercise could do her no good. In fact, she said it would even do her harm. Several times it became necessary for her physician to order her to return to her exercise program. Naturally her back ached worse at first and her chest muscles, weakened by her illness, were sore. To gain her confidence all exercises for her upper torso were eliminated for the first ten days, then introduced so gradually she hardly knew she was doing them. Eventually, she was given a full routine.

So aches themselves provide no alibi for not exercising. We all know the theory that to rid one's self of muscle soreness caused by strenuous sports, follow up next day with more of the same. This is a sound theory provided it is not carried to the excess that leads to overuse of one set of muscles and neglect of others.

Exercise relieves aches induced by muscle abuse or pampering. So if you ache after your first attempt at an exercise program, don't skip the next day. These aches are temporary. They will disappear as your muscles assume a better tone. Take your exercise easy—and slowly—at first. Repeat each individual exercise only the specified number of times. As you become more proficient and less painful, increase both the vigor and the time you put into them.

Remember, though, that exercise is no miracle cure or fairy god-mother wand-waving act. Exercise will not make an aching body rise from its bed of pain or throw away its crutches after one or two fifteen-minute sessions. Exercise is nature's way of rejuvenating the body, and nature's ways are always slow. It took a billion years to prepare our bodies to function as they do. We cannot expect nature to remedy overnight the man-made ills in that body.

For Men Only

One of these days I hope some man will spur his courage to the point where he'll explain to me honestly one curious phenomenon—why men in general show so much more distaste for a regular exercise routine than do women. Many women, commenting on this, will say that men, despite their claims to greater strength and physical ability, turn into big cry-babies when ill or in pain. This is a common idea but is certainly not borne out during wars.

NOW IS THE TIME

I think men's distaste for exercise routine goes deeper than fear of pain. In some of my men students I sense an embarrassment about exercise that has nothing to do with fear of pain. Rather it is a fear that regular exercise routine somehow belittles them—detracts from their Herculean concept of themselves. They do not object to exercise dignified by the name of sport on the contrary, they will boast of aching muscles contracted during a week-end of squash or tennis or badminton or golf. But to set up a program of complete body exercise that will free them of those week-end aches well, what do you take them for sissies?

This attitude seems strange. The human male starts life with a framework built on grander lines than that of the female. Throughout his younger days he occupies his body with more vigorous pursuits than does the average female. In sedentary adult occupations his structure gets out of condition. His muscles lose tone his members and organs slump. Then in his anxiety to exhibit his superior strength to the little woman or the fellows at the club, he abuses his body. He lifts heavy luggage. He strains at bulky furniture. He heaves massive rocks onto the stone wall he's building about the garden or chops a cord of firewood in a single afternoon.

I am pulling no punches in these paragraphs addressed to men because I have seen so much of the danger of this typical male attitude. *Men suffer from more back disabilities than do women.* Almost always they can be traced to muscles, long out of condition, that have been strained by overuse. That's too bad, isn't it, when muscles can be kept in condition by judicious regular exercise.

THE WITCHING HOUR

If you wake with an "Oh what a beautiful morning" feeling and just can't wait to warble in the shower a morning exercise period is perfectly all right for you. Control your ebullience, though for at least fifteen minutes to give your circulation time to catch up with your mood.

If you must struggle to open your eyes and hate the world and all that's in it as you stumble groggily to your bath, beware of early

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as you pull your fingers back to the palm of your hand. Then just as slowly and resisting each move, open your fist and extend the fingers out straight again.

Now do the same thing just as quickly as you can.

See how much less effort the speedy action takes? You might compare this with the way a dose of salts or mineral oil acts on your intestines. Hastily it expels the waste matter with no effort whatsoever from the muscles in the intestinal walls. To be sure, it does eliminate the waste that should be eliminated, but it doesn't strengthen those weak intestinal muscles that are the prime offender in most cases of constipation!

When you read the exercise instructions you will note that they usually say, "Repeat this three times." Or "four times." Rarely is it advised to repeat more than six times and never as many as ten times, as you may have done in school gymnastics. I believe in doing fewer exercises but making each one count for something. And rest a second or so between each repetition, to let the muscles gather momentum for the next action.

X MARKS THE SPOT

The floor, not the bed, is the place to exercise. The floor resists your efforts and forces you really to exert yourself. The bed springs roll with the body. They can make your exercise both too easy and too difficult, depending on what exercise you are doing.

If you have a beach pad or one from a garden chaise longue, cushion the floor with it. If neither is available, fold two or three blankets into beach pad size. None of these is so soft that it counteracts the floor's resistance, but it will save your elbows and spine from knocks and avoid irritating the skin during beginner's awkwardness. If the floor is already covered with a thick rug, you can use less padding.

QUESTION BOX

Now some answers to a few common questions

To the ladies, a "Yes" By all means continue exercising during

NOW IS THE TIME

your menstrual periods. If cramps beset you at this time, exercising will help alleviate them. It also lightens the depression so many women experience each month. If you flow heavily during the first day or two, omit your exercises for those days. Or skip the abdominal exercises and work less vigorously than usual on the rest.

Should one exercise when he has a cold? That depends. There are those who profit from exercise when the cold is slight. They say it helps clear up head congestion. Certainly it is not recommended if a temperature accompanies the cold. The accepted treatment for colds is rest rather than activity. If you do engage in exercise during a cold, shorten your usual period and work only hard enough to stimulate circulation slightly. Be careful too, not to exercise in a draft. Gentle massage around the back of the neck and through the upper back will loosen congestion. You can help yourself somewhat in this way by using the massage treatment suggested for the car driver in Chapter 12.

Sinus congestion and headaches and even migraines will certainly not worsen and may improve with exercise. So stimulated, the circulation will carry off more quickly the poisons that cause such aches.

If your stomach is upset—what then? No exercise, if it's a case of food poisoning. Many upset stomachs, however, result from nervous tension, temper squalls or fear bogies. That's just the time to call for help from the relaxing exercises you'll find in Chapter 18.

What about massage? Will it help put muscles in fine fettle? It will not. The deep manipulative method of massage is successfully used to stimulate circulation, relax nerve tension, help repair strained muscles and ligaments and even fractured bones. The slapping pounding technique of massage may stimulate circulation to a certain extent, but don't count on it, or on deep manipulation to develop real muscle tone. OR to reduce excess flesh! The consensus of physicians is that 99 percent of overweight is caused by overeating and under exercising.

Strengthening of muscle fibers can only be accomplished by the actual movement of the muscles directed to action by the mind. It is very pleasant to lie there and let someone work at your tired back.

YOUR ACHES—WHAT TO DO ABOUT THEM

or tense neck. But don't kid yourself that any permanent relief from your aches will result from this massage. The aches won't disappear until the muscles are firm and strong. And only correct usage will firm and strengthen them. It is easier to understand what correct muscle usage is, if one first understands something about the muscles themselves—how they function, as explained briefly in Chapter 3, and particularly how they fit into the working diagram of the body. The next four chapters should make that picture clear.

TRIPPINGLY FROM THE MODERN TONGUE FALLS THE PHRASE "MY sacro-iliac." Every ache in the lower back today becomes "my sacro-iliac," whether or not the christening has the authority of a physician. Real sacro-iliac sprain hurts cruelly, but orthopedists testify that the real thing fortunately occurs far less often than casual reference to it would imply

Actually most persons with so-called sacro-iliac trouble would be unable to locate accurately the joint where real sacro-iliac sprain occurs. Scores of men and women have complained to me of their sacro-iliac and when asked to locate the hurt, lay their fingers on a spot anywhere within a six to eight inch radius of the sacro-iliac joint.

Some kind of backache does strike oftener than any other physically-induced ache. Backache is no respecter of age, sex or condition of financial servitude. And practically every ache attacking an other wise hale and hearty back can be traced to our own thoughtless use of our anatomy.

A mother of a ten-months old baby complained of pain that jumped "like a toothache" from her neck clear to the end of her spine. Just to lift the baby from its crib made her bite her lips to keep from crying out. I spent one day in her home watching as she went about her housekeeping duties. Every task she performed—running the vacuum cleaner, moving furniture, cleaning the bathtub, preparing meals—was done incorrectly. Back muscles too weak to bear it, were car-

YOUR ACHES—WHAT TO DO ABOUT THEM

rying the strain of her wrong postures Lifting the baby, also done incorrectly, acted as the last straw

She was shown how to accomplish these tasks with minimum strain and instructed in proper lifting methods A series of exercises was outlined to strengthen her muscles and to relieve the aches of nervous tension In two months she came to see me, eyes sparkling "No more toothache in my back," she announced happily. "But why hadn't someone told me these things before? I had no idea I was abusing myself "

Most "backachers" are like this young mother With little understanding of how a back is designed, how can they know when they abuse it? So let's discuss briefly the anatomy of the back before dwelling on its various aches and their causes Then you will understand better of what your back is capable, or incapable

THE FRAMEWORK BONES

The bony framework of the back is composed of the spine, the scapulae or shoulder blades, the ribs and the posterior portion of the pelvic girdle

The *spine* is not one bone but consists of thirty-three or thirty-four roughly circular structures called vertebrae Ligaments join them one atop the next Through each is an opening and the successive openings form the spinal canal through which runs the spinal cord, one of the three most important divisions of the human nervous system Any disturbance of the spinal column reacts unfavorably on the spinal cord

The Vertebrae

The spine's vertebrae are divided into five departments, somewhat in the manner of these "vertical set-ups" found in many modern businesses Each department runs its own business yet is responsible to the spinal column as a whole

Seven *cervical* vertebrae top the spine Their function is to support the head They are the smallest vertebrae and you cannot locate and count them separately You can, however, find the seventh or

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lowest one, in fact, it juts out prominently at the spot where the ugly "dowager's bump" appears in company with middle age. Locate your seventh cervical vertebra now, for "the seventh cervical" is going to become a mighty familiar phrase to you.

The next twelve, the *thoracic* vertebrae, are larger. You can easily feel them and easily see them when a person bends forward. The thoracic department is responsible for the support of the ribs, with one vertebra assigned to each rib.

Still thicker and heavier the five *lumbar* vertebrae extend through the area known as the "small" of the back—the place where you get lumbago. They bear the brunt of upholding the weight of the viscera in the abdominal cavity in front of them.

Below the lumbar are the *sacral* vertebrae, five of them fused into one piece, the *sacrum*. The upper three provide the surface against which the back of the hip bone rests. Sacrum and hip bone form the pelvic girdle within which are contained bladder, sigmoid and rectum, and in the female the organs of reproduction. In ancient days the organs of the pelvic cavity were frequently offered in sacrifice to the gods. Thus they came to be considered sacred, or as the ancient Romans said "sacrum," and because the five fused vertebrae in back of them were a part of their protection, they, too, became "sacrum."

The lowest group of vertebrae, consisting of sometimes four and sometimes five, is also fused into either one or two pieces to form the *coccyx*. This odd spinal appendage has apparently but one function today—to offer evidence that at one stage in our careers we hung and swung from tree branches by prehensile tails.

Spinal Articulations

Save for the two groups of fused vertebrae, free movement exists between individual vertebrae. Movement also pertains between the vertebrae and other bony structures. The first cervical vertebra articulates, or makes a joint, with the skull. Thoracic vertebrae articulate with the ribs. The last lumbar vertebra articulates with the fused sacrum forming the lumbosacral joint. The three fused upper

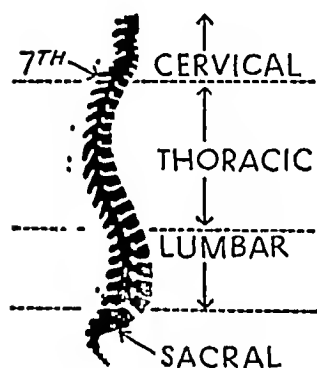
YOUR ACHES—WHAT TO DO ABOUT THEM

vertebrae of the sacrum articulate with that part of the hip bone called the ilium, at which point is found the famous sacro-iliac joint

The spine as a whole is movable, too, though when you first start your back exercises you may doubt it! But I shall not ask your spine to do anything it is not supposed to or cannot do

Spinal Curves

The well-developed back is not absolutely straight and flat. Nor is it supposed to be. The spine has four curves put there by nature's intent.



Look at a picture of an embryo in its mother's womb. Its spine makes a continuous arc from head to sacrum (Dotted line in diagram). A newborn babe can take this same position. But presently this babe starts holding up his head until at about four months he has developed in his spine the first new and legitimate curve, the cervical curve. From a continuous arc his spine has changed to an arc with a forward-thrusting curve extending from the first cervical vertebra to the second

thoracic vertebra. The next change comes when the infant begins to crawl, a second forward-thrusting curve appears in the lumbar region.

The spine now consists of four gentle curves—cervical and lumbar put there by nature's plan as we attained balance and motion, and thoracic and sacral, the remaining parts of the original arc. Any other curves, or exaggerations of these four curves, we must blame on ourselves, assuming, of course, there is no structural weakness due to illness or accident.

So blame yourself for "lordosis." That's the lumbar curve exaggeration recently brought into the limelight by corset companies' publicity. In the old gray mare it's called "sway back" and more women than men display it. Perhaps that's because of the weight of

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the extra organs carried in the female pelvis. But it can be corrected.

Give yourself a black mark, too, for that "thank ye-ma'am" hump that's replaced your original smooth flowing thoracic curve. Either you've been careless or—well, there is no "or." You've been careless even though your round back results from the kind of job you do. You should have been compensating for it all these years.

Occasionally we find a person with a really straight spine, lacking even the normal curves. Often such a person aches. Normal back curves give a back the bounce and springiness that in proper posture absorb shocks. A straight back does not have as efficient shock absorbers.

Other Back Bones

Ribs and pelvic bones join with the spine but the scapulae, or shoulder blades, do not. There is some question whether the scapulae should rightly be considered as part of the back. Actually they are a part of the shoulder girdle which will be fully described in the following chapter. But it is difficult to make a clear demarcation between shoulders and back when aches are under discussion. Incorrect shoulder posture or use will make the back ache, as you can easily understand when you know the type of muscles found there.

MUSCLES OF THE BACK

The back wears its own "two-way stretch" garment made of wide band like muscles, two on each side of the spine. The main muscular support of the upper back—the *trapezius*—extends longitudinally from the seventh cervical vertebra to the twelfth thoracic, and latitudinally to the top of the shoulder. Any geometry student can guess from its name that it must resemble that odd shaped figure, the trapezium. When you have bent your head and upper back forward, the trapezius brings them back up again and helps hold them erect. If you continually bend head and upper back forward the trapezius is continually strained and your upper back will develop aches. The trapezius is used, too, in motions involving the scapulae. It is one of the muscles you must consciously use to pull your shoulders back.

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Moving downward we come to the *latissimus dorsi*. As its Latin name tells you, it is the widest muscle of the back, reaching longitudinally from the lower six thoracic vertebrae through the five lumbar and sacral vertebrae, and latitudinally from the spine to the under part of the upper arm bone. At its upper edge it lies under the trapezius. This wide muscle supports the middle and lower back. Certain usages of the upper arm and shoulder involve use of this muscle.

When you toss the baby into the air, take a vicious smash at a tennis ball, lift your suit case onto the train platform or shove someone out of the way with your upper arm, the *latissimus dorsi* helps you.

Below this flat, wide muscle lie three muscles bearing the family name of *gluteus*, identified respectively as *maximus*, *medius*, and *minimus*. *Gluteus maximus* moves the thigh bone in one direction while both *medius* and *minimus* move it in another. Put together they form the thickest muscle pad in the whole body, that cushion which you know in varying degrees of familiarity as the buttocks, *derrière* or fanny. Actually the name *gluteus* derives from the Greek word meaning rump. Whatever you call it, you sit on it. If you sit on it correctly, it helps support the lower back and keep the entire back upright.

All these muscles have other muscles under and around them and all are important. These, however, are more evident, especially when the back begins to ache.

And why does it ache?

BACK ACHES

In this chapter the physical reasons for back aches are emphasized. At the same time I honestly believe that at least fifty percent of back aches are mentally-induced, the wages of the sin of nervous tension. The spinal column houses the spinal cord, a main pipeline of the nervous system. Nerves continually on edge constantly nudge at the muscles surrounding them. Tension pinches blood vessels like a vise. Thus dammed up, the circulation cannot carry off the body poisons as fast as it should. The poisons back up and flood the muscles.

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Strong muscles can fight back longer, weak ones haven't a chance of withstanding this nerve irritation. But teach a nervously tense person to perform his tasks in the easy way, give his muscles strengthening and relaxing exercise routines, and more often than not it's good-bye to aches.

You can blame most physically-induced back aches on faulty habits in basic posture or in the attitudes we assume in daily occupations. We overuse our back muscles or we pamper them. Almost never do we use them just enough. Some overuse can't be helped, it's part of the weekly pay envelope. Knowing that the latissimus dorsi and trapezius must work with upper arm and shoulder in addition to covering the back, you can see why any job requiring constant use of the upper arm and shoulder may pay off in back pains.

Generally back aches strike in one or more of three places:

- 1 At the base of the skull, extending along the neck about two inches each side of the spine.
- 2 Between the shoulder blades.
- 3 Across the lower back.

Skullduggery

Sometimes the base-of-skull ache shoots clear to the shoulder joint. Sometimes it penetrates to the seventh cervical vertebra. If it does, you'll know it when you angle your head forward sharply. Place your fingers on these spots and press. Did you say "Ouch?" Lots of people say worse than that.

Aches in this area are mean. They're red hot needles piercing deeper and deeper into your hide an electric current probing among your bones. Lying flat on your back helps until you get up again.

Nothing will permanently poultice your aches except perfecting your posture. You might lessen them by a change of occupation or by learning to relax your nerves. But what you want is to get rid of them, isn't it? So pull in that head that protrudes like a turtle's, it's wrenching and straining at the muscles. And get those shoulders away

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from your ears Take your elbows off the table or desk and your chin out of your hands, let your arms hang straight down for a change Your muscles get awfully sick and tired of holding your shoulders up in the air that way And there are lots of small muscles in the neck and shoulders to get tired

Not-So-Gay Blades

If you suffer from a shoulder blade ache, perhaps you find it odd that it so often hits you at the right of the spine and just at the edge of the right scapula It's not odd, if you are right-handed Were you left-handed, you'd point to the left of the spine to locate this ache But southpaws suffer less from this ache than the right-hander Ordinarily the left-handed person makes more use of his right hand and arm than right-handers do of their left And there's one of the clues to that ache overuse of the arm When the arm works overtime, so do the trapezius and other muscles that are connected with your shoulder and shoulder blades

A woman lawyer complained constantly of this ache She worked at a desk all day handling heavy law books and eternally wielding a pen or pencil Usually she labored under extreme pressure and its resulting tension She was given exercises to strengthen muscles in that area, taught to maintain a correct sitting position and instructed in relaxation methods In a month's time her aches had vanished and would that I could end this case right here But later, under extreme pressure, she allowed herself to slump into her old occupational posture habits The aches returned There was nothing more to be done for her She knew well enough what to do but only she herself could make her do it

Has this ache ever accompanied you on a week-end or vacation train trip? You packed your suit case too heavily for your unused muscles Lugging any heavy objects by hand may have the same effect And what about that blustery winter day you spent before the open fire, nose in a book all day? Didn't you have a shoulder blade ache that night? Next time, hold the book up to your nose instead of your nose down to the book Which of course brings us right back

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again to the matter of posture and holding head up and shoulders back. There's a limit to what the trapezius can stand.

Shoulder blades have a particular affinity for men and women who sit most of the day. They do it on the typist, the switchboard operator and anyone else who constantly sits and uses arms and shoulders. If you are one of those, look yourself up in Chapter 12, entirely devoted to the sedentary worker.

Moanin' Low

Just let the subject of lower back ache come up in a group and what started out as a tidy conversation develops into a free-for-all, with men and women, old and young, fighting to share their woes.

Nine of every ten of them are their own lower back's worst enemy. The tenth really needs a physician's attention. So just in case your number is ten, take this friendly advice. If your lower back hurts all the time, don't rely on the price of this book to cure it. Go at once to your doctor. If he recommends medical treatment, take it. If he suggests consultation with an orthopedist, obey him. If he merely says, "You need exercise," be thankful.

Pain in the lower back may be evidence of crimes other than poor posture: lax muscles or even sacro-iliac sprain. Certain diseases of the abdominal viscera hang out a warning light in lower back pain. If you've ever met up with kidney inflammation, for example, you know it was introduced by lower back pain. Some visceral ailments may be helped by exercise, but that should be your doctor's decision, not yours. Certain doctors believe that even after sacro-iliac sprain gentle exercises should be done.

A man repairing a stone wall on his property lifted a huge rock. Suddenly there was a snap and an agonizing pain in his lower back. His doctor diagnosed it as sacro-iliac strain, kept him in bed for a week, then strapped him securely and began putting him through mild exercises. In a few weeks he was his old self—with one notable exception: he has never stopped exercising his back muscles in the ten years since.

All exercises for such backs must be planned to avoid twisting the

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muscles They should be done slowly and for a few moments only, both morning and night *Although the back exercises given in this book are designed to avoid side twists, they are not intended for use with sacro-iliac strain unless your physician okays them*

For the other nine of you, here's how you abuse your lower back. First off you don't do a thing to strengthen it. Over and over again when back aches are asked if they do any exercising they reply brightly, "Oh, yes! Every night and morning I bend forward and touch the floor with my hands at least ten times." This "exercise" strengthens the lower back muscles just about as much as drinking a cup of tea. Never in all my years of teaching have I given it in a back routine. Gravity carries the body forward and there is not sufficient counteracting muscle action to make it worth doing. The best that can be said for it is that it stretches the thigh muscles slightly. But there are far better exercises for even that.

No, you do not exercise your lower back properly. You do not stand properly, either. Remember that list you checked in Chapter 3? You stand with your weight on one foot and out juts the pelvic girdle. The pelvic girdle articulates with the sacral vertebrae, *right where you hurt*.

You stand with knees thrust back, calf muscles tense. Out go the buttocks and in goes the curve of the lower back. All the muscles there must brace themselves to adjust to this unnatural posture. But do you care? No. You just go on using hot water bottles when the ache becomes too severe. Take a tip from a doctor, a specialist in arthritis. He'll tell you that the constant straining of muscles and ligaments due to hollow backs and rounded shoulders are the forerunners of many cases of upper and lower back arthritis.

Then you mistreat your feet—a case where distance lends disenchantment. Closely linked roads lie between unhappy feet and the lower back and over them can travel quickly those visiting aches.

Are your arches weak? You'll regret it in your lower back. Do your shoes pinch? Your lower back can tell you all about it. Are your heels so high that your weight pitches forward or so run over that it cants to the side? Look forward to an ache in your lower back.

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You lash at your lower back muscles like a Simou Legree every time you lift and carry something heavy. There is no more vicious injunction than that oft repeated "Put your back into it" when we are being urged on to some extra task. Put your legs into it, yes. Your shoulders, too. But not those poor overworked lower back muscles. They've got job enough already supporting the back and the viscera.

Did it ever occur to you that your bed mattress can fall into bad posture habits? It develops exaggerated curves, too, and they tease your back all the time you are sleeping. Give that mattress some corrective exercise along with your own. Have its body rebuilt, its sagging muscles strengthened. That can be done easier and at less cost than providing yourself with a new back.

By the way, have you weighed yourself recently? You'd be surprised how ten extra pounds and three inches around the abdominal region will drag at your lower back muscles. They're probably weak anyway, for overweight indicates lack of muscle exercise. If you exercised your muscles you'd burn up that excess fat. With it hanging down in front the lower back muscles stretch and stretch till they're so exhausted they can't relax.

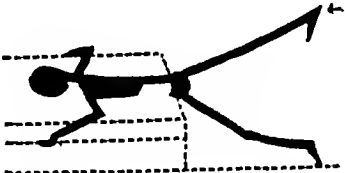
Do you really want to cure your back aches? Then take another look at Chapter 3 and practice the posture it preaches. Read the chapter that applies to your specific daily activities, study yourself to learn what you are doing wrong, then right that wrong. And do the following exercises every day.

The first exercise is one of the easiest to do but an excellent one to start on. It can be done without the slightest strain on even the weakest of lower backs. It can also be done standing. It is more beneficial if done twice a day, even if it is repeated fewer times on each occasion.

EXERCISES FOR THE LOWER BACK

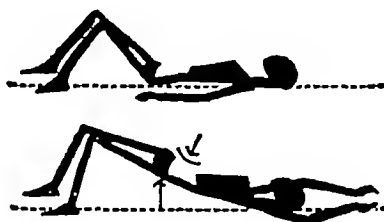
- I. 1. Lie on your face, arms in comfortable position, legs out straight.
2. Squeeze the buttocks muscles together as tight as possible.
3. Relax.
4. Repeat five times. Rest. Do this 10 to 15 times in all.
- II. 1. Lie on your back, legs extended straight ahead.

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- 2 With heel extended, slowly raise Right Leg until you feel a definite pull in the muscles and tendons of the back of the leg
 - 3 Slowly lower the Right Leg to original position
 - 4 Repeat with Left Leg
 - 5 Do complete exercise three times Relax Repeat three more times
- III 1 Lie face downward over the end of a sofa, cot or narrow bed Let the body from the waist downward hang off the edge, with feet on the floor
- 
- 2 Grasp both sides of the mattress
 - 3 With heel extended, raise Right Leg as high as possible without feeling a strain in the lower back
 - 4 Lower the Right Leg slowly to the floor
 - 5 Repeat with Left Leg
 - 6 Do entire exercise three times Rest Repeat three times
- IV 1 Use the same starting position as Exercise III
- 2 Raise both legs as high as possible without strain
 - 3 Lower the legs
 - 4 Do three times Rest Repeat three times

All lower back exercises should be followed at intervals with compensating exercises that use the abdominal muscles Strengthening of the abdominal muscles will also relieve lower back muscles from some of their strain Follow the preceding exercises with these three

EXERCISES FOR THE ABDOMEN



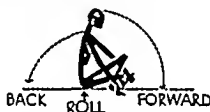
- I 1 Lie on your back, arms at the side, knees bent with feet flat on the floor
- 2 Raise arms over head, at same time lifting up hips and pulling in the abdominal muscles as hard as you can

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3. Lower arms and hips to floor
4. Do this five times. Relax. Repeat five times.



- II. 1. On hands and knees, back straight, head raised.
2. Extend the Right Arm forward and the Left Leg back. Lift them as high as possible and hold for a moment.
3. Lower Right Arm and Left Leg.
4. Repeat using Left Arm and Right Leg.
5. Do this four times. Relax. Repeat four times.



- III. 1. Sit with legs crossed tailor wise.
2. Keeping arms outside of knees, grasp the front of your feet.
3. Roll over backward, trying to touch your toes to the floor in back of your head.
4. Roll forward, trying to touch your head to the floor. The backward and forward rolls should be a continuous motion with no break between, as though you were rocking.
5. Do this four times. Relax. Repeat four times.

Some of you will find these exercises easy as pie. Others have a struggle ahead before final accomplishment. Do them slowly and gently at first later with more speed and vigor. And to help your upper back, turn the page and read first about your shoulders. Shoulder and upper back exercises go hand in hand at the end of that chapter.

SHOULDER TO SHOULDER

6

MANKIND HAS EVER BEEN IMPRESSED WITH THE POWER OF SHOULDERS. A Greek myth tells how Atlas held the whole vault of heaven on his shoulders—a bit of fantasy kept alive today by the name of the top vertebra of the spine, the Atlas. Several of our clichés testify to the high regard in which shoulders have always been held. We “put our shoulder to the wheel” when we are stirred to extra effort. We “shoulder” the responsibilities of an enterprise or the cares of a family.

The world admires the broad-shouldered man. So much so that women have imitated the male shoulder physique with enormous broadening pads in their clothing.

Onto our shoulders do descend actual physical burdens. Their design indicates the most important—carrying and lifting.

Loose usage of the term sacro-iliac has alerted us to the importance of our lower backs. Just so modern bandying about of the word bursitis has made us comprehend more sharply the significance of shoulders in daily tasks. Get yourself a good attack of bursitis if you want to check on how much you really use your shoulders.

As in the case of sacro-iliac, much of the shoulder pain that embitters us is not bursitis in strict medical terminology. The discomfort, however, may be the warning signal of future bursitis and any continued or really severe pain in the shoulder joint calls for the attention of a physician.

True bursitis, like true sacro-iliac sprain, crucifies and cripples. A

SHOULDER TO SHOULDER

bursa is a padlike sac containing fluid. It is found near joints where tendons slide over bone or ligament and create friction. When a bursa becomes inflamed, the condition called bursitis exists. When it grows worse calcium deposits form there. Bursae are situated in joints other than the shoulder—in the elbow, the hip, the heel, the knee. You've heard of "housemaid's knee", it's a bursitis condition. But prevalence in the shoulder joint has led us to think of bursitis as an exclusive, if doubtful, prerogative of our shoulders.

Whether or not they spring from true bursitis, shoulders frequently develop aches. Most often the complaint is made in a woman's voice, for men's shoulders are built stronger than women's, particularly in front.

SHOULDER BONES

The bones of the shoulder encircle the body with what is called the shoulder "girdle." The pelvic girdle is a complete girdle; the shoulder girdle is not, for the *scapulae* or shoulder blades stop short of the spine. In front the *clavicles* curve smoothly, close to the neck line and meet with the *sternum* or breast bone, forming the yoke shape previously mentioned. The female clavicle is a slenderer bone than the male. Obviously nature did not intend the human female to carry as heavy loads as the male.

Clavicle from the front and scapula from the back meet with the long bone of the upper arm. This arm bone is called the *humerus*. But humerus though it may be, it is not the "funny bone" that causes us to wince when it is hit. It does, however, lie very close to the funny bone, which is not a bone at all but the ulnar nerve in the elbow area.

At the rendezvous of clavicle, scapula and humerus we find the shoulder joint, the most freely movable joint in the entire body and the one where bursitis, real or fancied, most often occurs.

SHOULDER MUSCLES

Muscles too starting in the back, chest and upper arm arrive at the shoulder. That, of course, makes it easy for an ache in the shoulder to be caused by a wrong motion elsewhere or for wrong use of

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shoulders to cause pain in an entirely different part of the body

Here is a case in point During the war, when transportation equipment was both scarce and out of repair, an acquaintance of mine in Washington, D C , was riding one of the District's old-fashioned type trolley cars, small, unstable and ready to buck every time the power was applied With the car stopped for a traffic light, this man was standing, one arm loosely encircling a vertical pole, while he read his newspaper The light changed, the car kicked up its heels and plunged forward Caught off guard, the passenger was first slammed against the pole then flung almost completely around it Ruefully he rubbed upper arm and shoulder and decided to change to a handhold During that evening he noticed a tightening in his chest, which became a real pain as bedtime neared Subject to bronchitis, he recognized the pain as the usual warning sign of his malady, wondering when and where he had laid himself open to exposure He dosed himself with his usual medicine on retiring, spent an uncomfortable night and arose in the morning with no sign of bronchitis but with a sharply painful chest Alarmed, he stopped in at his doctor's on his way to his work When examination showed no sign of bronchitis, the physician questioned him about his recent activities Having related his near accident of the previous day, the physician was quick to understand Chest muscles, too, rally round the shoulder and they had shared the results of the trolley car's tantrum

The trapezius, though primarily a muscle of the back, attaches to both clavicle and scapula, as well as the spine But of probably greatest interest to aches is the *deltoid*, capping the shoulder joint and fitting over the touchy bursa situated at that joint The deltoid forms a natural shoulder pad, in form not unlike the cloth pads used in the shoulders of clothing But the deltoid is fastened to our bodies in a position just the opposite of clothing shoulder pads, with point leading down over the top of the arm Its approximately triangular shape gives it its name, adopted from that of the triangular Greek capital letter *delta*

Every time a man lifts his hat to a pretty girl or helps his wife on with her coat, the deltoid comes into play When a boy pitches a base-

SHOULDER TO SHOULDER

ball, score an assist for the deltoid. When a girl brushes her hair, it's exercise for the deltoid as well as her tresses. And were it not for this bit of anatomy, romance would be tame indeed for lovers could not put their arms about each others' necks! Surely it behooves us to treat the deltoid well

Attached to clavicle and sternum and forming a thin, flat covering for the upper chest are the *pectoralis* muscles. Do you swim? Play tennis? Then you are exercising the *pectoralis* muscles as well as enjoying yourself. But if you sit at a desk slouched forward over your work all day, you are not exercising them and the next time you swim or play tennis they'll let you know of your neglect. Some of the exercises given at the end of the chapter are going to stretch them. If loose and flabby, they'll undoubtedly resent this punishment and rightly so. It's not their fault they've grown slack. Muscles prefer to do the work cut out for them. Why don't you let them?

You need strong *pectoralis* muscles if you are to keep your shoulders in their proper place and get rid of your aches. They have their aesthetic side too. Weak, underdeveloped *pectoralis* muscles result in hollow, caved in chests, the kind that make a man look dejected. Women with well-developed *pectoralis* muscles rejoice in firmer, more uplifted breasts.

SHOULDER ACHES

Aside from the joint itself it's the area between the joint and the neck base where the shoulder aches most often. Because of its close alliance with the back and its use this has already been discussed in Chapter 5. Because it so frequently accompanies sedentary professions you'll hear of it again in Chapter 12.

Meantime, what are you doing about that ugly word posture? Giving it the brush-off? Too bad you can't deal so easily with your aches. Better ride herd on those saggy shoulders. Before they bog down in your hollow chest, start moving them back to higher ground. Certainly you know enough about muscles by now to realize what's happening. Muscles in front are shortening growing loose and lazy. Muscles in back are lengthening continually trying to contract and hold those

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shoulders back. You're overusing the back muscles and pampering the front ones

There's just one plausible excuse for overuse of shoulder muscles and it isn't posture. Occupational necessity may require it and then it's hard to compensate for when you're right or left-handed. Violinists, for instance, wail dolefully of aches in one or sometimes both shoulders. Artists paint grim pictures of their pains. The worker, functioning at a one-arm action machine, sighs like a furnace though not with love. Even the trained athlete, expert at a one-sided sport, often wishes he were ambidextrous.

Yes, they have it tough. It would take some doing for a right-handed violinist or artist to wield bow or brush in the left hand. Or for the tennis pro to switch hands on his racquet.

But what about the housekeeper, indefatigable in her scrubbing, who repines at its inevitable result? And the salesman, his sample case hanging heavy with his wares, growling out his grievances? Nothing compels them to use the same arm hour after hour. Yet on they go, letting habit get the better of them.

It is always good to see a season when women's handbags have real honest-to-goodness hand handles. The envelope bag tucked under the arm and the shoulder strap bag both affect posture in the same way; they urge us to hunch up one shoulder and usually the same shoulder. Though it's a simple enough matter to change the side on which we carry a handbag, habit is hard to break and a right-handed person wants her right side free for other tasks. This goes for men's brief cases, too.

Bundle carrying has put many a woman in a disgruntled frame of mind. Both because her shoulders tire and because her men folk object to doing this chore for her. But this ungallant attitude unquestionably saves many men from shoulder aches. Habit places the bundle always on or under the same arm. Up hunches the shoulder. Up starts the ache.

Any one-sided occupation, sport or habit can develop aches in the parts of that side continually used, shoulder or elsewhere. In my teens I had a left total curvature of the spine. After courses in physical

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education it almost disappeared. Later I discovered fencing, enjoyed it and spent considerable time at it. After a couple of years my medical examiner found my curvature more pronounced. At once I set to work correcting my fencing positions so that I would not constantly pull toward the weaker side. It took some doing but persistence won and again my curvature was corrected.

One-sided habits can be corrected. Sports, however, particularly if they are your profession, present almost as difficult a remedial problem as occupations. But use that one side of your body as little as possible in other pursuits and learn to relax your overworked muscles whenever you have the opportunity. Chapter 19 gives you some simple acrobatics to do that will let you feel the difference between a contracted and a relaxed muscle.

Sports have their innings in a later chapter but this seems a good place to point out that most of them excellent as they are in exercising our bodies do not suffice to keep us free of all aches and pains. Too often a sport stresses certain muscles and neglects the rest. Sports instructors harp on "form" and they do so rightly. For form combines correct balance, correct posture, correct use of the body parts employed, plus the ability to relax muscles between plays. The so-called athlete may be a poor specimen of humanity indeed, when at rest. He may be beautifully developed in certain muscles but ugly in basic posture. Tennis players and golfers, though they must continually use pectoralis muscles, often drag stooping shoulders and hollowed chest back to the club house with them.

Clothing may be the original sin in tracing a shoulder ache and women's fur coats transgress notably. One woman sent to me in the middle of a winter by her physician, complained of pain in her shoulders and neck. Her posture was deplorable. It developed that the aches increased when she wore her fur coat, new that season for any length of time. I lifted the coat. It weighed a ton. I tried it on and felt as though I had suddenly assumed the role of Atlas. Even strong muscles will rebel at such a burden and hers were flaccid. She agreed that while correcting her posture and putting some vigor into her muscles she would wear a lighter coat except on the coldest of

YOUR ACHES—WHAT TO DO ABOUT THEM

days In no time at all the pains in shoulders and neck disappeared

Even so small a thing as the shape of a collar will promote discomfort I once had a pupil who, on very cold winter days, invariably showed up for her exercise period with the same complaint "The cold's got me again with the same old pain in the neck You'll have to massage it out " It happened that on one of these days I met her as she came in the door She was wearing a coat with a gigantic collar of fur pulled high about her ears Its tremendous bulk pushed her head far forward There was the answer to what had begun to look like a psychological problem Going about her daily routines with her head pushed forward and the weight of that collar lying on her neck—no wonder she had cold weather aches!

Should a shoulder-joint ache persist over some time or become really a real pain instead of just an ache, do consult your physician before trying to relieve it with the exercises that follow Let him decide first whether a focal infection exists and, if it does, whether he prefers immobilizing the shoulder during treatment But do a little thinking on the matter for yourself, too Decide whether you are using the shoulder muscles either incorrectly or too harshly Consider, too, whether you are in a continual state of nervous tension that keeps muscles in a partial state of contraction If you know this, you can help your doctor decide on the treatment With aches resulting from improper usage rather than focal infection, strengthening and relaxing exercises can be combined with heat and massage to bring you quicker relief

EXERCISES FOR UPPER BACK, SHOULDERS, CHEST

- I 1 Lie face downward on your mat
- 2 Place hands palm down and elbows bent in front of body a little more than shoulder width apart
- 3 Pushing with hands and arms, raise upper part of body as high as possible, head high (You should feel a pull in the muscles between the shoulders and in those of the chest)



SHOULDER TO SHOULDER

4. Lower the body to first position.
5. Do this four times. Rest. Repeat four more times.





- II. 1. Sit with legs stretched out in front, knees slightly bent.
 2. Place hands palms down on mat beside buttocks.
 3. Stretch upward from your buttocks pushing chest forward. Keep head high and shoulders back without hunching them.
 4. Relax.
 5. Do this five times. Rest. Repeat five more times.
- III. 1. Stand facing wall, about three feet from it.
 2. Place hands on wall at shoulder height, fingers pointing toward each other. Have arms straight.
 3. Keeping back straight and head erect bend elbows slowly until chest almost touches wall. Do not hollow the lower back.
 4. Using resistance and keeping the back straight, slowly push back from wall to original position.
 5. Do this five times. Rest. Repeat five more times.



- IV. 1. On your hands and knees hands turned so fingers point toward each other. Keep upper back flat and head erect. Hips should be directly over your knees at all times.
2. Keeping upper back flat, lower it slowly downward, bending the elbows, until your face is just off the floor.

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- 3 As the back goes down, raise the Right Leg and extend it full length.
 - 4 Slowly return your body to the bent knee position, lowering the Right Leg as the back comes up
 - 5 Repeat, using Left Leg Relax.
 - 6 Do this exercise three times
- V 1 Lie on the mat on your face, hands clasped in back of body
- 
- 2 Raise the upper part of the body and circle it to the right three times
- 3 Relax
- 4 Raise body and repeat circle three times to left Relax.
- 5 Now roll over to your back and pull knees back to chest.
- 6 Rock gently back and forth five times
- 7 Repeat the entire exercise once more
- VI 1 Standing in correct posture, raise the Right Knee as high as possible and clasp it with both hands
- 
- 2 Pull back the shoulders, push chest forward Keep head erect and be careful not to elevate the shoulder joints
- 3 Return Right Leg to floor
- 4 Repeat using Left Knee
- 5 Repeat six times Rest Repeat six more times (You will move forward, step by step, as you do this exercise)

A LEG TO STAND ON

7

LEGS GET AROUND, AND TAKE YOU WITH THEM. SHORT ONES CAN DO just as well by you as long. Many a track meet has seen short legs break the tape ahead of long ones, because those short ones were stronger.

From the standpoint of everyday lifelong utility, *strength* of leg counts most. It's the long legged gal, to be sure who's the Powers model but even before thirty she'll need leg strength as she seeks another kind of job. The career of a model is short lived.

THIGH AND LEG BONES

Whether legs be long or short, leg bones are long compared with those in the rest of the frame. The longest bone in the entire body and the strongest, lies in the thigh extending from hip joint in the pelvic girdle to the knee. This bone the *femur* slants slightly inward from top to bottom bringing the knee just inside the plumb line described in Chapter 3. In the female figure the slant is more pronounced because of the comparatively greater width of the pelvis.

The lower leg has two bones. The larger *tibia* (shin bone) derives its name from a supposed resemblance to an ancient flute or reed pipe. The smaller *fibula* has an equally interesting name derivation. When Caesar crossed the Rubicon and Antony courted Cleopatra, many Romans were still fastening their togas with the silver like piece of bone that was one of the earliest clasps devised by primitive man. This fastening they called a fibula. The leg fibula is the thinnest,

YOUR ACHES—WHAT TO DO ABOUT THEM

most sliver-like bone of all the body's long bones With very little alteration it could be used as a giant's stickpin

You can locate both these bones In fact you can scarcely miss their lower ends and frequently you bark them Neither inner nor outer "ankle" bone is a separate bone, they are the protuberances on the lower end of the leg bones . . . the tibia on the inner side, the fibula on the outer.

Between the thigh and lower leg lies the *patella*, the ancient Latins' "little dish" and today's kneecap or kneepan This small bowl-shaped bone covers the knee joint around which are those bursae where "housemaid's knee" develops

At their lower ends the tibia and fibula join with the uppermost bone of the foot to form the ankle joint At the top, tibia and fibula articulate with each other The tibia also articulates with the bottom of the femur, forming the knee joint which the patella protects The femur top, in turn, meets with the hip bone

THIGH AND LEG MUSCLES

To move this hard-worked portion of our frame and get us where we want to go are many muscles Sitters constantly indulge them, athletes often persecute them Their names are multi-syllabled, difficult of pronunciation and rarely heard in social conversation I shall not burden you with many of them

Those that force themselves into our consciousness by aching are, for the most part, long ribbon-like bands that are easily strained When thigh muscles ache, rarely can you lay a finger on one spot and say, "Here is where I hurt" With that phrase your hands unconsciously move up or down a lengthy area.

Thigh Muscles

In the back of the thigh stretch a group of these ribbon-like muscles commonly called "the hamstrings" These are the muscles for which a wolf leaps when he wants to down a swift-footed animal Lamed in the hamstrings, the attacked animal cannot run When our own hamstrings are injured, we, too, cannot run

A LEG TO STAND ON

More of these stringy muscles lie in the front of the thigh. One, the *sartorius* reminds us that even in ancient times tailors must have sat cross-legged at work. Translated into everyday language, *sartorius* means "the tailor's muscle." We use it to move the femur and leg and to rotate the femur outward. Both these actions are necessary when we assume a cross-legged sitting position on the floor or lawn. When you do abdominal Exercise III in Chapter 5, you use your *sartorius*.

Calf Muscles

In your calf muscles you own a potential powerhouse. But mostly you use it only under half steam. You have to use these muscles, of course, just to take a step. But they'll give so much more service than that if you'll just call on them. They'll help in sitting down, standing up, lifting, climbing. And all without a murmur once you've gotten steam up. That's more than you can say of those lower back muscles you call on for so many of these tasks.

There's that fat, fleshy muscle in the back of the calf, for instance. It is easily seen. It is also frequently heard in protest when you suddenly shove it into a tough job after allowing it to idle. Take hold of the back of your leg just below the knee. You're feeling the *gastrocnemius*, the muscle we're talking about. Now feel on down the leg back. Does your hand tell you that this unpronounceable muscle extends the entire length of the leg? Then it tells you wrong, though that's a natural mistake. This chunky muscle stops just about where the fleshy part of your leg stops. From there on down to the ankle what may seem to be its continuation is actually the Achilles tendon that joins the *gastrocnemius* to the heel.

The *Achilles tendon* is the thickest and strongest tendon in the entire body, and the only one of which most of us are aware. It is so strong and hard that the uninitiated often mistake it for a slender bone. This is the tendon immortalized in the old Greek fable that relates how the mother of Achilles held her infant son by the ankle when she dipped him in the River Styx to make him invulnerable.

Despite its strength, the *Achilles tendon* boasts no more invulner

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ability today than when Thetis made the fatal error of covering part of it with her hand as she held her son in the magic waters. This is proved every time that women, accustomed to high heels, put on a pair of flats for a few hours of sports. Shortened by the stiltlike heels, the Achilles tendon painfully strains to lower the leg to the ground. When it strains you feel it, not only in the tendon itself, but in the fat calf muscle and in a second muscle connected with it, the *soleus*. This extends from front to back along the shin bone starting at the upper end of the fibula. The soleus moves the ankle.

Thighs and legs . . . those you must use unless you plan to spend the rest of your life in a wheel chair. What treatment do you give them? Or don't you? Few people, though neither bow-legged nor knock-kneed, can exhibit the kind of legs that interest cheesecake photographers. Overdevelopment makes legs knotty and bumpy with muscle. The professional dancer and the track star have legs like that. Underdevelopment leaves them puny and shapeless. OR pudgy with flabby flesh of overweight.

By theatrical standards of pulchritude, correct standing posture should align the two legs so that thighs, knees and calves touch; no light should be visible at those points. If you cannot pass this test successfully, don't hope to make the chorus of a big Broadway musical. But most of us will be highly satisfied if we can meet less rigid qualifications of leg beauty. Well-developed but not overdeveloped thigh and leg muscles result in long, gently curving outlines.

Because men's bones and muscles start with greater size, a man's legs will look knobbier and therefore less attractive than a woman's, but in the thigh area the male body usually displays more beauty. H. L. Mencken once described a woman's body as looking like "a dumbbell run over by an express train. Below the neck by the bow," he wrote, "and below the waist astern there are two masses that simply refuse to fit into a balanced composition. Viewed from the side, she presents an exaggerated S bisected by an imperfect straight line, and so she inevitably suggests a drunken dollar mark."¹

¹ H. L. Mencken, *In Defense of Women* (New York: Alfred A. Knopf, 1922)

A LEG TO STAND ON

Perhaps you won't go all the way with Mr Mencken, but you will admit that through the thigh area the two masses astern that he regards so caustically certainly manage to accumulate fat if not kept under control by sufficient exercise. A woman starts off with more curve in the thigh because of the greater width of her pelvis. She must be wise and wary to hold this curve to its natural minimum.

ACHES OF THE LEGS

Leg and thigh muscles jump into the limelight after an unaccustomed bout with a garden spade, a long stair climb when we are used to elevators or—when we first do exercises to strengthen them.

The hip joint is a complicated one and the muscles around it quite easily strained. You can do it standing on a street corner waiting for a bus. Just keep sighing and shifting your weight from one foot to the other, as you probably do anyway. Each time you shift, *jerk* go your hip muscles. Another satisfactory system calls for letting your feet weaken. But then, weak feet assist in straining almost any part of the lower body. The next chapter develops more thoroughly the close connection between feet and the rest of your anatomy. But already you should be aware of the muscle and tendon continuity that carries aches along from ankle to knee to hip to lower back. So whenever hip joint, thighs, knees or calves ache for no apparent reason, go into conference with your feet.

You probably pamper your thigh muscles. They thrive on locomotion but most of us starve them by sitting too much. That wouldn't be quite so bad if we'd only ring for these muscles to lower and raise us into and out of the chair. But that's just another task we give to our overworked back muscles. Then like a parent who gives the child a lollipop and spansks him for dribbling it on his clothes, we suddenly heap abuse on these muscles. When we sit with weight forward instead of well back on the *gluteus muscles*, we burden our thighs with a load they are not prepared to bear. Thigh muscles, remember, are the stringy ones, not the fat bouncy kind given us for sitting.

The knee joint is easily injured. A fall in which one lands on the knee or a sudden twist in a football game lies in the background of

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many an aching knee. But the knee often aches without actual injury, as housekeepers will testify. As slight a thing as a faulty foot position will throw leg muscles and ligaments far enough out of alignment to cause unnatural pull on the knee joint. An unusual amount of bending or of work requiring kneeling, excessive stair climbing, walking up hills . . . it takes very little to upset the balance of a knee when muscles are weak.

All knee troubles cannot be cured by exercise. Yet much that seems to be beyond the point where exercise can help actually is not. Here is an extreme case. A member of my own family had her patella completely smashed in an automobile accident. Surgeons sewed the pieces together and told her she would never again use the knee with any facility. A determined person, she made up her mind she would make the doctors eat their words. So she embarked on an exercise routine though the initial movements made her literally sob with pain. Little by little she began to regain mobility in her knee. Today no casual observer would know she had been an accident victim.

But it's in the lower legs where most of us suffer from our muscle pampering. We must use them when we walk, but we walk as little as possible, because—well, the car's right in front of the house and besides, our feet hurt. We should use calf muscles when we sit down and get up, when we ascend and descend stairs. But we don't because—gravity and the lower back are always with us. Comes the day when the car is garaged for repairs and the bus drivers are on strike. Or perhaps there's a look on the face of the day that reminds us we've not had a really good walk for months. So off we go gaily. And back we come suffering.

Watch the Scales!

Women particularly mistreat legs and thighs by allowing excess weight to accumulate there. Most doctors agree that only about one percent of overweight is due to glandular disturbances, the rest results from overeating and lack of exercise. Fats produced by the food we eat are either burned to release energy for activity or stored against a future that might need them. When the fat storage houses

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are filled to capacity and begin to overflow, we are overweight. This condition exists when the food intake exceeds the energy requirements of the individual. It can be overcome by reducing food intake and increasing the activity that necessitates burning of the fat.

Fatty pads form quickly around joints and muscles. If fat is not burned up by muscle exercise, it builds up in thick layers until, for all the good they do, our muscles might as well be a chrysalis in a cocoon. As the fat builds up it becomes increasingly difficult to use body parts correctly or even to use them at all.

Overweight in thighs and legs plagues the younger generation far less than it does their parents. As we age, we always incline to use our legs less and less. When we do use them, they ache. The first ache signals us it's time to give up altogether, so as age increases, legs become the first of the bodily parts to fail. How unnecessary this all is! For proof, consider King Gustav V of Sweden, a lifelong tennis enthusiast who was still playing at his favorite sport in his eighty-ninth year.

When feet get out of condition, we favor them. If you can't walk firmly and steadily on your two feet, body balance goes haywire, leg and thigh muscles must work harder to keep you upright. If you carry more of your weight on one foot than on the other, leg muscles pay for it.

If illness confines you to bed for any length of time, try to do some leg exercises while lying there. Do them gently and for short periods, but frequently. It will save you much of the after-illness leg aches that arise from disuse.

Few of us escape this life without experiencing the occasional torture of cramps in the legs. They strike more often in cold weather—or cold water—and very often during sleep. A leg cramp is the result of too sudden muscle contraction after inactivity. Taken by surprise, the muscle spasms. Always remember that muscles work more smoothly and efficiently when warm. Many a swimmer who finds his life endangered by a leg cramp has been lying on the beach inactive, for some length of time. He has dashed into cold water and struck out boldly for his goal without allowing his leg muscles time to

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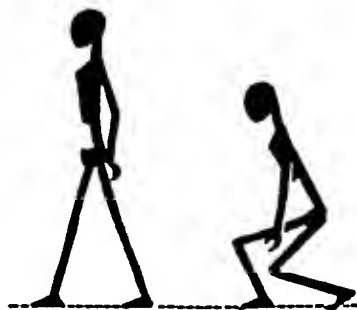
warm up to the task before them. A sleeper's leg cramp has a similar, though less avoidable, reason. Lying in a relaxed position, he suddenly changes to another position, still lost in his dreams. Resentful of being disturbed, the leg muscles spasm. When this happens to you, grasp the spasmed muscle with both hands and manipulate it gently.

Children's legs often develop aches that Grandmother will designate as "just growing pains." The name has considerable basis in fact. Our bones and muscles do not always grow at the same speed. Often a bone's growth outstrips that of a connecting muscle. Sometimes one muscle of a closely allied group will grow faster than its mates. When such conditions prevail, the lagging muscle will strain to keep up with the rest of the leg, and an ache results. But children also think themselves bigger and more able than they actually are. In an effort to do things beyond their attained physical powers, they can easily overuse muscles not yet strong enough.

Keep a watchful eye on the youngster if he complains of leg pains and see that he's not overdoing for his age and size.

But you're not too ancient to keep an eye on yourself, too. Not that I'm worried about you overdoing for your age. Underdoing—well, these exercises will take care of that!

EXERCISES FOR LEGS AND THIGHS



- I 1 Stand with legs about 18 inches apart, or one foot about 15 inches ahead of the other. Point feet straight ahead.
- 2 Bend the knees, lowering the body about $\frac{3}{4}$ of the way to the ground.

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3. Rise up again to starting position.
 4. Do this five times and then rest.
 5. Shake out first one leg and then the other
 6. Repeat the entire exercise two or three times.
- II. This is actually a jumping technique, but do not lift the body off the floor more than an inch or two
1. Stand with feet about six inches apart.
 2. Lift the body weight off the toes about one inch into the air
 3. Come back down onto the heels NOT just onto the balls of the feet.
 4. Do this six times Rest. Repeat six times.



- III. 1. Stand with feet about 24 inches apart.
2. Pivot left on ball of Left Foot and heel of Right Foot.
 3. Bend Left Knee until it almost touches the floor close to the Right Heel. Right Knee bends and swings slightly outward.
 4. Raise body up.
 5. Pivot right on ball of Right Foot and heel of Left Foot bend and raise body up.
 6. Do this six times. Rest. Repeat six times.
- IV. 1. Sit on the floor knees bent outward and soles of feet flat together Pull feet in toward center of body as far as you comfortably can.
2. Reach forward with both arms until you feel a pull on the inside of the thighs
 3. Place hands behind hips on the mat.
 4. Lift up buttocks and push body forward as far as possible, keeping knees bent and feet together



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- 5 Return to starting position
- 6 Do this five times Rest Repeat five more times

- V
- 1 Stand with legs 12 to 18 inches apart.
 - 2 Raise Right Leg up to waistline, or as near waistline as you can
 - 3 Using Right Hand, clasp knee and pull it as far to right as you can
 - 4 Release knee and lower the leg to the floor
 - 5 Repeat with Left Leg and Left Hand
 - 6 Do this four times Rest Repeat four more times

You may find it necessary to step forward as you alternate legs in this exercise

- VI
- 1 Stand with feet slightly apart, weight evenly balanced
 - 2 Slowly raise the weight of the body on the ball of the Left Foot.
 - 3 As Left Foot returns to flat position, Right Foot begins to raise up Both feet are in continuous motion
 - 4 Repeat several times until you feel the muscles of legs and feet are slightly tired Then rest and repeat again
 - 5 After you have done this standing still, begin to move around the room using the same general motion.



- VII
- 1 Stand with feet 24 to 36 inches apart.
 - 2 Extend arms straight out in front of you at shoulder height
 - 3 Pivot on the balls of your feet to the left and bend Left Knee.
 - 4 Keeping back flat, reach forward over Left Knee
 - 5 Return the body upright, turning to the right and reaching
 - 6 Do this four times Relax Repeat four more times
- VIII
- 1 Stand with arms hanging down close to body Bend the knees
 - 2 Swing arms forward and upward, at the same time raising the body up on the balls of the feet.
 - 3 Let arms keep swinging on down to make a complete circle. As they go down, bend the knees
 - 4 Continue these movements without any break, bending the knees a little more each time
 - 5 Make a complete arm circuit with knee bend, four times Rest Repeat four more times

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IX. This is the same exercise as VIII with an addition. The addition however should not be attempted if you have any kind of heart condition. When you have practiced VIII for several days and are becoming proficient in it, add to it a jumping motion as follows

- 1 When arms are high in air and your body is rising with them, give a slight jump just enough to lift the body off the ground an inch or two.
- 2 Repeat four times.

ARCH OF TRIUMPH . . . OR DESPAIR

8

Is YOUR HUSBAND SUDDENLY AND UNEXPLAINABLY SHOUTING AT THE children and you? Or beginning to grumble when Sunday's roast is served up again on Wednesday?

Has your wife recently taken to tears at imagined insults? Or nagging you about leaving the bathroom a soggy mess every morning?

What's going on? You're both careful about B O , halitosis, and all the other publicity ailments designed to break up homes. But—are you careful about your feet?

Aching feet etch more lines in faces than aching hearts. I personally know of one ticket to Reno bought on the strength—or rather, the weakness—of a mediotarsal arch.

Aching feet are one of America's biggest headaches. According to the National Association of Chiropodists, approximately 110 million of our 145 million population (and that's 75 percent) have foot disorders of some type. Of these 110 million, 88 million are adults and about half of these suffer from foot troubles that are structural—not just a corn or a callus, but arch ailments or worse.

At the beginning, our foot aches aren't severe enough to send us trotting to a podiatrist or orthopedist. At least we think they aren't. And by the time we do hobble in to his office, irreparable damage has been done. An aching foot is nothing to be minimized with a "I'll fix these shoes," and a trip to the shoe store for another pair. The new pair won't stop the ache. Not if I know the human race, and particularly the feminine part of it.

Yet usually we are right when we say, "It's these shoes." I know I am putting myself on the spot when I say unequivocally that most foot aches are caused by shoes. But let the shoe designers fulminate, let the fashion arbiters rage. It takes but a superficial knowledge of foot structure to prove my point.

CONSTRUCTION OF THE FOOT

Three groups of small bones, totalling thirty-six, comprise the foot. The *tarsus* or ankle area takes seven of them, including the *talus* with which the two leg bones, tibia and fibula, join. The *meta tarsal* or instep area uses five bones reaching from the tarsus to the toes. The toes themselves are made up of fourteen *phalanges*, two to the big toe and three to each of the others. That name phalanges is imaginative. It's the plural of the Latin *phalanx* which means a closely serried array of soldiers. The foot bones line up like a phalanx.

These bones, supported by ligaments, tendons and muscles, join in such a way that two arches form. The longitudinal or long arch extends lengthwise between the heel and the ball. The short or medio-tarsal arch runs crosswise of the five metatarsal bones.

Though small in size, foot muscles are large in their effect on our well being. They lie in the hollow of the longitudinal arch and around the metatarsal bones. Strong foot muscles support strong arches. Weak foot muscles—well, they can't support anything, not even a weakening arch. The arch just drops lower and lower. And the morale tags right along down with it.

You can easily feel the longitudinal arch on the inside border of your foot. You cannot find it on the outer border. Are your feet in good condition? Then make a damp footprint on the floor and the arch construction pops right up at you. The print won't show a complete foot. You'll see no damp tracing between the ball of the big toe and the heel.

The Footprint Clue

This damp footprint proves something. Nature intended feet to bear the body weight on their *outside* borders—not on the inside.

YOUR ACHES—WHAT TO DO ABOUT THEM

Where do your shoe heels begin to show wear? On the inside half? Then you carry your weight wrong. Go back to your basic posture description. It said, "weight rolling slightly to the *outside* border of the foot." Remember? Now you know why.

Let's look at your damp footprint again. Maybe it does show the entire outline of your foot. That may mean that you have the strongest type foot there is, the naturally flat foot. That's doubtful, though. In this country the naturally flat foot is almost as rare as a perfectly cooked steak. If you had one you'd not need to read this chapter. You did have one once. It came with your original package. You kept it quite a while, too. Then you started wearing shoes that the fashion magazines suggested. But more about that later.

To see a naturally flat foot, you'll have to hie yourself to one of those countries where a large part of the population never puts on a pair of shoes until they decide to come to America. That's where you'll find the straight-forward foot with its strong active muscles. That's where feet really get used and exercised, where toes learn to flex and grip. No, the flat print *your* foot makes doesn't mean a naturally flat foot. It means, my poor friend, that your arches are on the downgrade.

Foot Beauty

Rarely today does one see a really good-looking pair of feet. Corns and calluses are the least of their disfigurements. Toes romp off at odd angles or lean crazily against each other. A feverish protuberance adorns the big toe joint. A toenail seems hell bent on growing out on the under side of the toe. The best-looking feet I know of belong to a New York author who rates as "peculiar" among his acquaintances because he greets evening guests at his apartment impeccable as to dinner jacket but—barefooted! Unless obliged to go out on the street, his feet are never subjected to the confinement of shoes.

Excellent for the feet though it is, barefootedness is not recommended for residents of modern cities. It is a wonder to me how for so long this man has escaped the fungus of athlete's foot. So virulent is it in New York City, a doctor told me, that it is next to impossible

to avoid bringing it home from the sidewalk via your shoes. Then onto your rugs and floors it goes. One morning you jump out of bed, put your feet on the floor while reaching for your slippers and—you've got it.

I do not hold with the idea that only a long slender foot is attractive. A good-looking foot may be long or short, wide or narrow, just so long as its proportions please and it radiates strength and the ability to perform its intended functions. Its print would show an inner border straight as a die from heel to tip of big toe. The big toe joint would be neatly within this line. No toe would shove its neighbor and all would point straight ahead. The instep would not arch high in the so-called "aristocratic" way that indicates cramped metatarsals, but be gently sloped. And the skin would be smooth, and unmarred by corns, calluses or enlarged veins.

That's the way your foot was intended to look. But how many times have you seen one that did? A foot that looks like that is never going to give you the screaming meenies.

FOOT ACHES

Did you ever stop to think that when you are erect *all of you* rests on the foot's twenty six little bones and small muscles? No wonder they ache when abused. The structural aches should worry you most. A corn will nearly kill you but that's not structural weakness. Take the pressure off that spot and the pain subsides. But a mediotalar arch pain carries ugly implications. That pain tells you the muscles holding the bones that form this transverse arch aren't in good health. They're tired of holding up those bones and their grip is slipping. They're letting the bones down just a little, then a little more, and more. Spreading of the bones strains the ligaments and tendons and irritates the nerves no end. Your foot hurts like all get out and it gets longer and wider. So you get a larger size shoe. That does it—that stops the pain. Just what you needed! The arch bones like it, too now they have width and length to spread some more.

Longitudinal arch weakness pursues us less often but more painfully. What happens is similar to the spreading of the mediotalar

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arch but different sets of muscles are affected . . . the ones that connect with the trail north through legs and thighs Up through the Achilles tendon races the pain On into the gastrocnemius and soleus muscles of the leg From there it is but a short skip and jump to the thigh muscles and those of the lower back You remember, don't you, the warning to look to your feet when your lower back hurts?

Sometimes the bones of both arches spread and drop and then you are in a pickle! Both arches will pain So will the shins, the calves, the knees And the lower back.

Then there's the inflammatory and unsightly bunion That attacks the joint where the first phalanx of the big toe meets the first metatarsal bone Chalk that agony up to shoes, too the kind that push your big toe inward from the straight line it should have As the big toe slants in toward the others, the joint is pushed outward, inflaming nerves and muscles around it.

Few there are today who can boast of no corn, no callus Since these are not structural weaknesses, we're inclined to laugh them off They are no laughing matter in either their immediate discomfort or in their end results In an attempt to ease their red-hot soreness, we "favor" the part of the foot they are on But unless we walk firmly and evenly on both feet, the body balance is disturbed Once again we have started a cycle of bad posture that results in aches far removed from the feet.

Corns and calluses may appear on almost any part of the foot Constant irritation of them has been known to result in arthritis, neuritis, muscular spasms, sore tendons, sprained ankles, aching knees and back, and even cancer If you call any one of these a laughing matter, your brand of humor is peculiar You can blame your corns on shoes You can blame your calluses on incorrect posture When you shift your weight to a part of the foot not prepared to bear it, that horny patch forms as a bit of protective armor over the delicate skin A callus is a dead giveaway of just where you're going wrong in distributing your weight So it shouldn't be too hard to cure Shift your weight to where it belongs, in standing and in walking

FOOT ABUSES

Do you think that foot ailments plagued our primeval ancestors? When we humans started to walk, it was on grass and soft earth. Man made his foot coverings of the natural skins of the animals he killed. He made little attempt to give them shape, he wrapped and tied them loosely. His foot muscles had ample room for complete exercise.

Today we walk on cement and macadam. We encase our feet in chemically treated leather with several layers of it between the foot and the ground. Oh, we have to have sturdy soles to protect us from bruises, but how in the world can we get real foot exercise in them? Without exercise, feet muscles are going to deteriorate, just like any muscles. Don't fool yourself that walking exercises your feet. Your legs yes. But all you do about your feet is pick one up and put it down, over and over again.

Compare the construction of your hand and foot. They're almost as much alike as the famous two peas. Foot bones are larger, yet our hands are stronger. Why? Because we're eternally doing things with our hands. We pick up a pen and write a letter. We grasp a spoon and beat up a cake. We shake hands. We pound the desk top with our fists. All little things to be sure but they add up to quite a lot of exercise.

Then we use our hands uncovered. Try encasing yours in a snug fitting pair of kid gloves and see how much exercise you can give them. Exercise? Why you can scarcely sign a check with them on.

Shoe Crimes

Yes you can put modern shoes at the top of a list of foot abuses. Because practically every abuse stems from them. Nature designed feet to rest on the ground and be exercised every time we take a step. Toes were intended to be used. Of course we must wear shoes. Raymond Duncan to the contrary. But we wear shoes all wrong for our feet. Look at the fashionable woman's shoe for instance. What relation has it to the natural outlines of the foot? The forepart is almost never broad enough, it cramps the toes together till they couldn't

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move if they would. The slant of the inner edge pushes the big toe from its natural straight line, that's how bunions start.

The high heel shortens the Achilles tendon. It also throws the body weight far forward over the metatarsal arch and the toes. A share of that weight belongs back on the heels. The open heel, when badly fitted as it so often is, leaves your heel extending out into a void, supportless. Nature intended your heel to rest on something. Even when better fitted, the slightest unevenness in pavement starts the foot sliding from side to side. And what do you suppose that does to your weight and balance?

As for pumps, either your foot strains continually to hold them on or they must be fitted so snugly across the instep that circulation is cut off.

Men's shoes don't distort the foot as badly as women's. But their heavy weight and stiff soles don't do them any good. (Why must men wear such heavy shoes? Today most of them don't walk any more than women do.) You'll find some distortion, though, for even men's shoes often fail the test of a straight inner line. And when there comes a fad for pointed toes, they're just as badly off as women.

Among my pupils are many 'teen agers and college girls who boast of their "sensible" shoes. Then they show me the popular loafers. I am of two minds about this type shoe. In their favor they have flat heels, wide toes and a fairly straight inner line. But generally they are sloppily fitted. Then the foot begins to spread because its muscles are weak from lack of exercise. So the arches begin to droop. If foot muscles are strong, loafer type shoes are fine.

But we must wear something, so, what? Occasionally foot specialists cooperate with shoe designers and evolve a line of models that at least parallels the natural contours of the feet and allows them space for some exercise. Never handsome according to modern ideas of shoe beauty and smartness, these designs become a drug on the market or find their place in the windows of orthopedic shoe salons. And you wouldn't be seen dead in an orthopedic shoe shop, would you? Then there are some foot specialists who will take a mold of your feet and make your shoes to fit that mold. If you can take with equanimity

curious and shocked glances at your feet, plus a \$65-or more shot in the budget, they're your feet's meat. At least one such concern has worked up an interesting psychological approach to shoes of this sort. They waste no effort to make the shoes inconspicuous or disguise their corrective intent. Instead they put into them gaily colored leathers with decorative details that turn them into a conversation piece. They still look odd, but amusingly and smartly so.

Barring such shoes, the only solace for shoe-caused foot aches is to strengthen the foot as much as possible by extra curricular exercise, to get the most sensible shoes your pride and budget will allow, and to treat your feet with consideration when you sit, stand and walk. You will find foot strengthening exercises at the end of this chapter.

Other Causes of Aches

But you can sport the ugliest corrective shoes in the world and still suffer from your feet. Yes—your posture again. When you walk or stand with weight on the inside of the longitudinal arch, you put the weight on the portion least able to bear it. Already suffering from lack of exercise, it shouldn't surprise you if it just refuses to stand up.

When you walk with feet pointed out, the bones are pushed from their rightful position. This duck walk also strains the Achilles tendon and the leg muscles with which the tendon connects. Then you get it in the knee.

Extra avoirdupois puts extra strain on feet. Try carrying a ten pound weight in each hand for several hours and see how your feet feel. Feet come to us in correct proportion to the rest of our bodies. Generally they continue to grow in proportion to the growth of the body. When we increase the weight our framework was designed to carry, feet muscles must struggle harder to bear the extra weight.

A woman came to me about ten years ago when she was in her late fifties. She was considerably overweight and her doctor had prescribed exercise along with a reducing diet. She arrived groaning "Oh! My feet are killing me!" Examination showed distinct mediotarsal weakness and a beginning of trouble in the long arch as well.

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Specific foot exercises were added to her exercise routine. She loved sweets and time after time fell from her diet. Reducing her weight to the point her doctor advised dragged on for nearly two years. But as it came down and her feet strengthened from their exercises, she complained less and less of foot pain. She is now sixty-eight, disciplines herself as to food, keeps her weight where it should be and trots around town nimble-footed as a terrier.

Without thinking about them, most of us do silly things that add to our foot troubles. A friend who had been a city resident all her life recently acquired a place in the country. Full of enthusiasm for her first attempt at gardening, she invited me for a week-end—and for planting advice. I found her early in the morning wielding a spade with more vigor than discretion, wearing a pair of high-heeled patent leather pumps. "Better put on your gardening shoes for that job," I advised. "These are my gardening shoes," she answered blithely. "They're an old pair. I don't care if I ruin them."

That was the first time I had encountered that particular brand of foot ruination, though I know that wearing worn-out dress shoes for doing housework is a common practice. Gardening and housework—then if ever comes need for perfect shoes, or as near perfect as can be found. Broad, comfortable heels and the good support of an oxford, or, even better for gardening, a boot that rises above the ankle bone—these should be our choice.

FOOT CARE

I cannot impress on you too strongly the danger of neglecting even the smallest foot ailment. And that includes even corns and calluses. Since corns are an obvious result of wrong shoes, the first remedy is to change to a style that puts no pressure where your corns flourish. For your calluses shift your weight. Then take both these offenders to a good chiropodist or podiatrist for proper removal. Don't, unless you have unusual difficulty in getting to his office, fool around with these yourself. But if you must, be sure to sterilize the instruments you use, either in boiling water, alcohol or some other equally effective disinfectant.

If your feet break out in a rash or start burning and itching, see a doctor at once. If they become rough, dry and scaly, treat them as you'd treat your hands, with a good lanolin or penetrating oil cream. If they swell in hot weather, use alternate hot and cold water plunges, and lie down with feet higher than the head. It's a good idea, too, to take this position after long hours of standing in hot weather.

If you suspect longitudinal arch trouble, see an orthopedist. If you must be delayed in getting to him, you can get some relief by bandaging with strips of adhesive tape, inch wide elastic banding or gauze. Do it like this:

- 1 Start on the outside border of the foot, just below where the little toe begins.
- 2 Bring the bandage strip firmly under the foot, across the front of the ankle to four or five inches above the ankle bone.
- 3 Continue to use strips in this way, slightly overlapping them until the under surface of the foot is covered up to the heel bone.

Emergency first-aid treatment for suspected mediotalar arch trouble can also be given. A Tampax opened out flat provides a perfect ready made pad for the arch. Or you can make a pad of soft felt or medical cotton encased in gauze one inch by two inches and not over one-fourth of an inch thick. Attach the Tampax or pad with narrow adhesive tape at the center of the metatarsals just back of the ball of the foot. But don't rely on this for permanent relief. See the foot doctor.

And to whip up some new vigor in those tired foot muscles, here are your exercises.

EXERCISES FOR THE FEET

- I. *The Measuring Worm* Watch him. He arches his back, draws his rear forward, then moves his front end forward. With your feet, it's like this and you should do it two or three times a day whenever you can slip off your shoes.
 - 1 Sit on a chair with feet placed straight ahead.

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- 2 Keeping toes in one spot, arch the foot, drawing the heel up toward the toes by use of muscles in both arches
- 3 Stretch toes out straight Foot will move forward slightly
- 4 Repeat six to eight times Relax feet by shaking Repeat.



II *Cross and Circle*

- 1 Sit on chair with Left Knee crossed over Right
- 2 Point toes of Left Foot in the air
- 3 Curl left toes under and grip with them
- 4 Circle foot to left five times
- 5 Relax Then circle foot to right five times, toes curled and gripped
- 6 Cross Right Knee over Left and repeat with Right Foot
- 7 Do entire exercise three times

III. *Standing Grip*

- 1 Take correct standing posture
- 2 Walk around the room gripping gently with your toes at each step As you grip, lift up on the muscles along the inside border of your feet, feeling your weight on the outside border
- 3 Make a second circuit of the room gripping harder than before

IV *Prone Grip*

- 1 Lie on your back on mat or bed (You can do this before getting up in the morning)
- 2 Curl your toes under and grip hard
- 3 As you grip, bend the foot back at the ankle and push down with the heel
- 4 Repeat six times with each foot Relax Repeat another six times

V *Toe Point*

- 1 Lying on your back, stretch both feet forward, pointing hard with the toes
- 2 Bend the feet back, pushing down with the heels
- 3 Roll the feet so the toes point together
- 4 Relax and repeat six or eight times

And now for some home-made massage Don't get nervous if you feel or hear an occasional slight snap while you're doing it!

VI *Needed Kneading*

- 1 Sit with Right Foot resting on Left Knee
- 2 Grasp the foot with both hands, Left Thumb press-



ing on the center of the sole behind the ball and Right Thumb on ball at base of Left Toe. (Left-handers go into reverse!)

- 3 Using thumb and fingers feel along the bones to the end of the toes pressing firmly
4. Use a rotary movement of the Left Thumb behind the ball of the foot and behind each toe to stimulate circulation.
- 5 Repeat for Left Foot.

DAILY DOES IT

9

THE FOUR PRECEDING CHAPTERS OUTLINED EXERCISES FOR THE muscles of your back, shoulders, chest, abdomen, legs and feet. Be faithful to them. Done daily, they will strengthen and limberize your muscles until using them correctly is as natural as using a knife and fork. But—they must be used correctly *at all times* if you want permanent relief from aches.

Every minute of the day and everything done in those minutes counts. Think of this when you are peeling potatoes, wheeling the baby carriage, exercising the dog, building an outdoor grill, entertaining an out-of-town client at a night club—or being entertained. You won't, of course, remember every single admonition when you start to discipline yourself. Select a few points on which to concentrate for the first four or five days. Once they establish themselves in your consciousness, add some more. Eventually all the essentials will have become habitual.

Remember the counsel of Moses: "As thy days, so shall thy strength be," and start concentrating the moment you open your eyes in the morning.

THE BEDACHE

If you ache when you wake, look to your bed. It should soothe, not scathe your body. It may be the springs that maltreat you. Or the mattress. Or the pillow. Or even the bed coverings. Consider what part of your anatomy aches when you wake and analyze your

bed for its faults. Many common bed faults are easy to correct.

Don't blame only your bed, however, for your aches. If your muscles were all in fine fettle, you could sleep on the floor without feeling a twinge. But they aren't. So doesn't it make sense to insure that your bed will really rest them?

The Bedsprings

Are your bedsprings flat or coil type? If flat steel, are they flat or do they sag like a bag in the middle? Do they *ting* back into place when you push them or come back sluggishly? Years of strain and stress can enervate a bedspring as well as a muscle. Check to determine if they are well supported and still strong enough to take it.

Coil springs as they age can get tipsy. They stagger to one side taking the mattress with them. You don't roll off when you sleep because though your mind is unconscious your muscles aren't. They struggle all night to hold you on. In the morning they're as fatigued as when they went to bed.

Considering your bodily welfare, it is poor economy to invest in cheap bedsprings, even though no one sees them. Far better to allocate more of your bedroom budget to bedsprings and less to draperies or rugs. If you're considering an open-coil spring, the kind based on a platform will treat you kindly for a longer time. If it's boxed, be sure the coils are tightly compressed.

The Mattress

Most Americans love the innerspring mattress. Many love it more than they love their back, and stores have done a land office business selling "bed boards" to people who have been advised that they need a firm support under their backs when they sleep. Used in this way, the bed board is a snare and delusion. Consider the thickness of an innerspring mattress. How can a board underneath it affect its action on the top? Actually the bed board was not designed to be used in this way. It was intended to be used to correct the sag in a spring and for this purpose is efficient.

If your back bothers you and you still want an innerspring mat

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tress, ask for a "corrective" mattress with very heavy coils surrounded by a metal corset. This corset keeps the coils in place and grips the filling around them.

Those in the know disagree on the advisability of sleeping on a hair mattress if the back aches. Hair gives you the firmest of all mattresses as well as the costliest. Usually, like a new shoe, it needs to be broken in and will probably need remaking every five years or so. Plenty of people have slept on hair mattresses all their lives with never a wince or a twinge. Plenty of others find them unendurable at the first sign of backache.

Bed Covers

Your bed covers may be the culprit. Here's a case in point. A group was spending a week-end at a Vermont ski lodge. They arrived on one of those twenty-below nights and were all hothouse flowers from New York City's overheated apartments. The heartiest man in the group had had no previous experience with New England winters and the party assembled at breakfast to the accompaniment of his groans. "No exercise for me today," he announced. "I was so cold all night, every bone aches." "Why didn't you phone down for an extra blanket?" his friends asked. "I got two extras," he replied, "and that made five. Then I put the bedspread and my overcoat on top of those and still I was cold." "Heavens!" spoke up a very small frail female, "I should think you would ache with all that weight on you. I only used two blankets. But of course I had on long sleeved flannel pajamas and wool bed socks."

Despite all the articles published by popular magazines and based on the findings of scientific laboratories, many folk still harbor the old-fashioned fancy that weight means warmth. Any arctic explorer would disillusion these mixed-up thinkers. Generally one good lightweight all-wool blanket keeps you cozier than two heavy cotton ones. The porous construction of the wool fibre holds the escaping body heat and insulates against the outside air. The down puff, or comforter as some parts of the country call it, is even lighter and warmer than a wool blanket. If you suffer from winter cold and bed

cover aches, do as the feminine skier did wear warmer nightclothing and use fewer covers, or, if it doesn't break your bank, invest in a thermostatically controlled blanket. They're so light in weight they can't possibly put pressure on you, yet they give a constantly even heat.

Any cotton filled quilt will be heavy and won't be warm, no matter how gay its patchwork or beautiful its quilting. Certainly if you have any arthritic or rheumatic tendency, avoid cotton coverings as you would smallpox. Cotton tends to hold dampness. If your house or the climate is damp, you'll be far more comfortable between thin wool sheets.

Pillows

Eternal controversies rage over sleeping with or without a pillow with one or more than one. Many bronchitics and asthmatics breathe easier when propped up on two or more pillows. Some people go to sleep more quickly after an emotional or nervously upset day if they prop their head high. The theory is that the excess blood flows down from their heads.

In these controversies I take the middle road, believing that a small soft pillow does best by the normal healthy person. A pillow protects the bony structure of the head from the hardness of the mattress and guards the neck from drafts. It should be small and soft because a high and hard one forces the head forward from the seventh cervical vertebra. Since you spend approximately a third of the day in bed you can scarcely avoid bad posture habits if the head is trained in this forward thrust all night long.

The famous "*Sleep Shop*" at Lewis & Conger's in New York City has researched extensively on the subject of sleeping comfort. Its director Norman Dine, has come up with the following "*Helpful Hints for Hibernating Humans*" who aim to by-pass bedaches:

- 1 Minimum width for a single bed 39 inches.
- 2 Minimum width for a double bed 72 inches
- 3 Minimum bed length, seven inches longer than the height of the sleeper

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- 4 To escape winter drafts, the top of the mattress should be at least $1\frac{1}{2}$ feet from the floor
- 5 To avoid summer heat, the space between the bottom of the springs and the floor should be at least six inches
- 6 If your circulation is poor, elevate the foot of the mattress from four to six inches
- 7 Little aches due to uneven distribution of the body weight can be eased by using little "tuck-in" pillows at the small of the back, under the knees or other strategic spots
- 8 To detect a sag in the springs, lay a bedspread directly over the springs and the sag will show up

ALARMS AND EXCURSIONS

How pleasant it would be if some device were perfected that, at the set hour, sent off an aroma of freshly brewed coffee to tickle our nostrils and lure us gently into wakefulness. Instead we must rely on that devilish invention, the alarm clock. Its strident clang startles you. Like a frightened deer you bound across the room to stop its clamor.

At no time should a resting muscle be forced into quick, sudden action. At this particular time, your muscles are at the day's peak of relaxation. A relaxed muscle needs warming up before it goes into real action. The heart, too, slows during sleep and needs warming, for the heart is just another muscle, albeit our most important one.

But you must use an alarm. Then set that tocsin far enough ahead of your actual rising time so you can warm up to the action of arising. Set it near enough your bed so you can just reach out and turn it off, but don't go back to sleep! That may require will-power. The temptation to seize "just five minutes more" pulses strong in the human breast. Steel yourself. If you will immediately follow these next suggestions, you will remain awake.

Home Stretch

Be a copycat . . . literally. Watch a wise old Tom when he awakes. Almost never does a cat arise from a doze without stretching. It

pushes out its paws, arches its back, twists its neck. It luxuriates in its motions. Time is no object. The cat takes plenty and adds a few good yawns.

Every exercise lesson I give begins with a stretch. A good stretch prepares the muscles for real work. The cat knows that. So do many other animals. But people don't, they're smarter than animals!

When you stretch, feel that you're slowly pulling the extremities away from the center of the body. Encourage that rising yawn, it's an outward expression of your inner release. It relaxes your nerves, your diaphragm and your other muscles. So stretch and yawn your waking way through these.

I. Eye-Openers

1. Push down with feet and legs first one, then the other. Extend the heel as you push. Do this two or three times relaxing completely between each time.
2. Flat on your back. Roll the shoulders first to one side, then to the other. Keep your hips down. Repeat two or three times.
3. Lift the arms pushing them slowly up, out and back. Repeat two or three times.

Aches in areas or joints? Give them a little special but gentle attention like this.

II. The Knee-High

Do this slowly not jerkily three or four times with each leg.

1. Bend the knee and bring it back to your stomach.
2. Extend the leg, heel leading.

III. Backer Upper

1. Flatten the back against the mattress.
2. Arch the scapulae so the back humps up a bit.
3. Drop it down flat.
4. Repeat two or three times.

IV. Neck Unties

1. Place your hands on the back of your head.
2. Rock the head slowly forward and back.
3. Repeat three or four times.

Now your circulation has begun to step up its pace. Your muscles know it's morning. Swing your knees over the side of the bed and sit

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on its edge Another stretch is on the way to iron out spine kinks

V *Unpacking the Trunk*

- 1 Raise your arms easily over your head Don't tense them
- 2 From the waist turn your trunk slowly from side to side
- 3 As you turn stretch your fingers out and pull your spine up from the hips
- 4 Repeat the rotation several times

Now once again, if you're a knee-acher, limber up those joints. Sit there on the bed edge with your back straight and hands in back of hips Bring up as high as possible first one knee and then the other Give each leg about three tries at this

Still feeling lazy? Good! This is just the moment to lend a hand to your feet. Especially if they give you trouble Do the *Needed Kneading* massage described in Chapter 8, pages 84 and 85 Follow it with the *Measuring Worm* on pages 83 and 84

UP AND AT 'EM

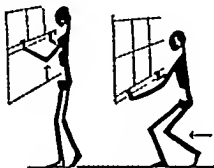
Up on your feet now, in correct standing position Once again imitate the action of the cat He always takes another good stretch before starting his mousing Get your arms up over your head, spread your fingers, feel your spine pull up A big yawn, too, won't harm you But none of those deep breathing exercises that are such a fetish with some They are not necessary when you first arise, and for some people they may not be good

Deep breathing disposes of accumulated carbon dioxide and increases the oxygen content of the lungs You accumulate very little carbon dioxide during sleep and an excess of oxygen makes some people dizzy The natural sequence of this chemistry—and the natural sequence is always best—is first, use of muscles, second, accumulation of body poisons, and third, increased heart action so the circulation can carry off the poisons

From here on the scheduling of your procedure is up to you You may prefer your bath now or later in the day You may want to do your complete exercise routine at this point and bathe when it is finished The important thing is not when, but how you do it. The procedures are outlined in the sequence most persons use

Closing the Windows

The apparently simple act of closing windows has brought many an aching back to the doctor's office. If your windows stick, for goodness sake have them repaired. It's an easier job than repairing a strained back. Once windows slide easily, no one can have an alibi for wrenching and twisting himself. Here's the right way



- 1 Stand squarely in front of the window and close to it.
- 2 Place BOTH hands on the window frame or its handles. Keep your back straight.
- 3 Pull straight down, using both hands equally so the body won't twist.
4. If the window must go down lower than your arms will reach, keep your back straight and bend your knees.

To open a window, stand close and squarely in front of it. Place the palms of the hands on the upper frame and push up using both hands with equal pressure. When the window has risen to a point where you can no longer push on the upper frame place the palms under the lower frame and continue pushing. And of course you hold your back straight all the time.

THE BATH ROUTINE

If you suffer from constipation you should do some abdominal exercises just before the bath. You'll find these in Chapter 19 in the

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daily routines Be sure to urinate before these abdominal exercises no matter what time of day you do them.

This is the time, too, to do your regular daily exercising, if you happen to be one of those bounding spirits who like to take early morning workouts.

Teeth Cleaning

Perhaps it seems far-fetched to maintain that the simple operation of teeth cleaning may aggravate an ache, and I don't mean toothache. Teeth cleaning can be a real pain in the neck Most folk stick their heads out over the basin just the way so many people walk—like a chicken about to peck at grain Watch your husband, your wife, your roommate if you don't believe that The alibi for this seventh cervical craning is universal ' "I have to stick my head out so the tooth paste drippings won't roll down my chin "

That's nonsense Less noxious and just as neat results can be obtained by bending from the waist with straight back and tipping the head downward from the base of the skull Try it and see

Tub or Shower

Whether you tub or shower or whether you do it morning or night or both is immaterial *How* you bathe is important Time was when the morning cold shower was associated only with those stalwarts who are the cover-boys or girls of physical culture magazines Today you can't get even a lifted eyebrow in response to a boast of this stimulating habit A cold shower, so its addicts have learned, acts beneficially on the nerve endings in the skin These nerves have a double reaction on the blood vessels—constriction followed by dilation—producing the afterglow so satisfactory to the bather The morning quick-starter is the one who really benefits from a cold shower, the slow-starter finds it too much of a shock to his system Adulthood is generally no time to start the cold-shower habit, and most certainly not if any type of heart condition exists Any adult who wants to experiment, however, will find it easier to take following a warm or tepid shower or bath in midsummer.

Perhaps it is hardly within the province of an exercise treatise to discuss accidents. But so many times an injury that requires special exercise, or worse, to make the injured part usable again can be escaped. That is especially true of bathtub accidents, for most of them result from pure carelessness. The bathroom is not, however, the great killer that it is often made out to be. According to National Safety Council statistics, the bathroom rates sixth in responsibility for deaths inside the home. Both bedroom and kitchen run ahead of it. Nevertheless, far too many accidents happen in that room. The Metropolitan Life Insurance Company estimates 100,000 as the yearly toll of deaths and injuries due to bathroom accidents. Of these, falls due to slipping in the tub or on the damp floor are the most common. So put these in your rule book.

- 1 Never put a bar of soap into the tub before you step in, unless it floats. Though you carefully avoid stepping on it, it may have left a slippery spot on the bottom of the tub. Even soap flakes may collect in one spot to do you dirt.
- 2 *Getting into the tub.* Safety engineers recommend all sorts of holding bars for installation around the tub or shower. Chances are you haven't any such. So do this. Stand close to the tub. Lift one leg and place it in the center of the tub, NOT on the slanting side. If your balance is shaky, put one hand on each side of the tub's rim, or one hand on the rim and one on the wall. Lift the other leg and bring that foot to the tub's center.
- 3 *Sitting down.* Keeping the body balanced and back straight helps avoid falls. But play even safer and balance yourself with both hands as you did when you got in. Keep back straight, bend the knees and lower the body into the water.
- 4 *Getting up.* First remove the soap from the water. Grasp the rim of the tub with your hands. Keeping back straight, use your leg and thigh muscles aided by your hands, to rise.
- 5 *Standing in the shower.* Keep your feet from four to six inches apart, either parallel or with one foot slightly forward.

YOUR ACHES—WHAT TO DO ABOUT THEM

Be sure your body is in balance. If you stand in the tub to shower, remember to keep your feet on the flat center.

*Bath Towel Gymnastics*¹

You've had your bath. You're ready to dry off and dress. Here's where you can get in some exercising without using extra time. Don't just mop and dab. Give your skin a good brisking and your arms a workout by using your bath towel like this.



1. Take an end of your bath towel in each hand. With head well back, pull towel back and forth across shoulders and upper back. Pull fairly hard so each arm, in turn, extends to its full outstretched length.
2. Bring Right Hand up high, Left Hand down low, and pull the towel back and forth diagonally across the back. As you do this, twist the body to the left. Now in reverse, Left Hand high, Right Hand low, and body twist to the right.
3. Holding towel horizontally, pull back and forth across the buttocks, extending the arms, in turn, as far as possible. As your hands move to the right, push out the Left Hip. As hands move left, push out Right Hip.
4. With towel held in both hands as if to wash on a scrubbing board, scrub back and forth and around over the abdominal area. Use some elbow grease, particularly if fat has started to build up there. Use a similar motion but with less force over chest or bust area.
5. With straight back, bend and vigorously scrub up and down the thighs and legs.
6. Towel in one hand, scrub the other arm. Under the upper

¹ Reprinted by courtesy of the *Woman's Home Companion*

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arm, manipulate the flesh as though you were kneading bread.

- 7 Sit, and with the towel rub feet vigorously, paying particular attention to calluses, heels and any spots where skin is rough or flaky

In a bath towel you own an excellent exercise machine. It will help you correct posture, work off fat and strengthen the arches of your feet. In Chapter 19 you'll find seven exercises for these purposes. They'll take more time than most people have after the morning bath, but they can be done any time, bath or no. They are not, however, offered as a substitute for other exercise routines. Think of them merely as a "plus."

DRESSING DIVIDENDS

Make your clothes work for you. It won't involve any drastic changes in your dressing methods. Just imagine yourself a cartoon subject and exaggerate your normal movements as you put on your garments.

Getting into a Girdle

- 1 Take hold of the girdle top with both hands and hold it at knee height. (You may not be able to hold it this high at first. Keep trying.) Do any necessary body bending with straight back.
- 2 Bring one bent knee up high so foot is just above the girdle and insert the leg. When standing on one foot, grip the floor with your toes, using all muscles of foot, leg and thigh.
- 3 Follow with other knee and leg.
- 4 Pull girdle up over thighs, keeping head up and back as straight as possible.

Shorts, Panties, Trousers, Slacks

Hold these the same as a girdle and bring the knees as high as possible before inserting the leg.

Shirts, Over-the-Head Dresses

Here's your chance to stretch the entire body. But be warned, it won't be easy if you are accustomed to donning these with rounded back and dropped-forward head.

- 1 With arms inserted in straps or sleeves, raise them as high as you can, stretching the spine as tall as possible.
- 2 As you pull the garment down, bend the head back, getting a feeling of stretch into the back neck muscles.
- 3 In removing such a garment, also try to get your arms as high up as you can.

Putting on Stockings

- 1 Sit with straight back.
- 2 Bring the knee up as high as you can.
- 3 Pull the stocking over the foot.
- 4 Slowly pull the stocking up the leg, at the same time stretching the leg out and extending the heel. This stretches the muscles and tendons in the back of the leg.

Putting on Shoes

Sit and bring your knee up high. If you must bend forward, do so with straight back.

Men's Shirts. Women's Blouses

Stand with straight back and head up. As you put your arm into the sleeve, extend it as far as possible to the side.

AND SO TO BREAKFAST

"But I don't eat breakfast," you say "and anyway, what has that to do with the ache in my shoulder blades?"

Plenty, in the opinion of many physicians. Certain specialists in the field of nutrition research, however, seem to be at variance with this opinion. Their ideas appeared in a magazine article not long ago. More or less they pooh-poohed the theory that a substantial breakfast gets the day off to a better start. The article stated that certain tests showed a high-carbohydrate breakfast to be just as efficient as a high-protein one and that workers who ate no breakfast at all performed their tasks just as well as hearty eaters. It did not state specifically what kind of workers were used as guinea pigs other than that they were "industrial." It did not say for how long a period the experiment was carried on nor did it reveal (for apparently that was not the purpose of the experiment) whether the non-eaters complained of more or fewer aches and pains than the nibblers and the gourmands.

With the carbohydrate vs. protein theory I have no quarrel but my experience with no-breakfast advocates makes me want far more convincing evidence than was presented before accepting that argument. There has hardly been a period during this generation's lifetime when some new theory of diet or nutrition was not being discussed. Some of these of course are "promotion" theories designed to popularize certain types of foods and built on small factors iso-

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lated from longer reports Others have had a sound basis in the scientific findings of current laboratory experiments When in the course of advancing scientific knowledge new and sometimes contrary evidence comes to light, these theories change But till now I have never heard of any theory claiming that the body does not need food energy to function continuously in an efficient and comfortable manner.

We Americans, it is true, have probably gone overboard on the subject of vitamins Yet at the risk of being labeled a reactionary I shall cling to the idea that we need our breakfast more than any meal of the day Pushing with an unfueled body hastens fatigue Fatigue brews aches . . . in desk drudges and brain trusters as well as in manual laborers or farmers The man who drives a tractor withstands nervous tensions better than the man who drives a pen Energy is needed to combat the nervous tensions responsible for so many of our aches

Non-breakfast eaters have argued that because the body does not use up energy when it sleeps, there is no question of restoring lost energy That is a false premise Invariably energy is used between the time of the last meal and the going to bed, and the body does use a certain amount of energy even in sleep Those scientific snoopers who spend their nights watching and metering the sleep reactions of others report that the body rarely remains in one position for long It turns, twists and wiggles, moves arms and legs without ever letting us know Any movement uses up some energy

Think of yourself as a steam engine, resting in the railroad yards, breathing gently from its banked fires Before it can be made to draw a train, its fires must be stoked and fuel consumed. Nor can the fireman postpone the stoking until the signal for moving the train is given Steam must be raised ahead of the timetable schedule.

Through the night body fires have been banked Unless you've made a midnight raid on the ice box, your stomach or fire box has gone without fresh fuel for at least 12 hours Whatever the actual number of hours, it is normally the longest foodless period in the 24-hour cycle

Eating breakfast aids our elimination processes, too Entering a

rested and relaxed stomach, food digests easily. Stomach and intestines are allies. Hot food put into the empty stomach wakes up the peristaltic action of both stomach and intestines. Persons who eat a good breakfast generally have less annoyance from constipation.

Breakfast is a necessary meal even if you are on a reducing diet. Breakfast is an easy meal to go without. The system does not then crave food as keenly as after it gets steam up. Omitting breakfast may tempt the reducer to eat more than he should at later meals. Eat your breakfast—your *reducing* breakfast. Cut down on lunch and dinner.

If you have the no-breakfast habit you have a mental hazard to overcome. You think you can't eat breakfast and so you can't eat breakfast. It took a World War to convince one woman that she could eat breakfast if—well here's her story. She had always lived within a block or two of where she worked. She slept until the last possible moment in the morning because, as she said, "I thought I couldn't down more than a cup of coffee anyway." At the beginning of the war she moved to Washington, D.C., and Washington was bursting out of its breeches with newcomers. The only place she could find to live was a three-quarter hour trolley car ride from her war job and her office opened at 8:45. She had no cooking facilities with her room but her office building had a cafeteria. I found," she said, "that by the time I had showered, dressed and traveled for forty-five minutes I really wanted more than a cup of coffee. I started by adding one piece of toast, then two. Then the orange juice looked good so that went on the tray. Eventually even that didn't seem to be enough so I tried an egg sometimes with bacon. Before this war job I'd get so faint in mid-morning that I'd be almost nauseated and then could only pick at my lunch. Eating a good breakfast carried me comfortably through the morning and—I really wanted lunch. Since I wanted to gain rather than reduce, this was all to the good.

Many a person is a morning "slow-starter" as Chapter 4 pointed out. It takes time for circulation to get moving at its normal rate—the will to do anything at all awakens reluctantly. To rid yourself of the

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no-breakfast habit, get up a little earlier and take more time in your preparations for the day. Oh, yes, you could, if you made up your mind to it! If a fine new job at double the salary suddenly appeared, you'd take it even if it meant getting to work an hour earlier. Well, a fine new energy might help in getting that job. So get yourself up. You've got to, anyway, if you follow the previous suggestions for your waking and getting up exercises. Those in themselves give your circulation a gentle boost. Use the little-by-little method the workman adopted. In a couple of months you'll be eating with the best of them. Not, though, if you start your breakfast with a cigarette. Let the cigarette be your dessert. It will help you to eat, if you'll sit correctly at your breakfast table. With abdominal muscles pulled in and up, you don't get that overstuffed feeling so quickly.

Ordinarily I dislike to—and usually won't—give diet menus. Those are the prerogative of the physician or the nutritionist. The three that follow, however, are standard with both of those experts, and you have already assured yourself that you are a normally healthy person. They are all based on the requirements of a sedentary worker. If you do hard energy-using manual labor or walk a lot, you will probably want to increase their size. But not if you are trying to reduce!

Number 1 is a so-called maintenance breakfast, designed for the person of ideal weight—no need to gain, no desire to lose. Number 2 is for you who'd like to put on a few pounds, and Number 3 for those who want to drop a few.

Breakfast Menu No. 1

Fruit or fruit juice or vegetable juice
Cereal OR egg, OR bacon and egg
Toast, rolls or muffins, with or without butter or margarine
Coffee, tea, milk or cocoa

Breakfast Menu No. 2

Fruit, fruit juice or vegetable juice
Cereal with cream
Bacon and eggs, OR lean meat or fish
Toast, rolls or muffins with plenty of butter or margarine
Coffee or tea with cream, milk or cocoa

FOOD FOR THOUGHT

Breakfast Menu No 3

5 oz. fruit or juice

1 egg cooked without fat, OR cottage cheese, OR small piece of lean meat

$\frac{1}{2}$ slice of melba toast WITHOUT butter or margarine

Skim milk or other beverage without cream and sugar

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DO YOU WARBLE HEIGHO HEIGHO AS OFF TO WORK YOU GO, OR INTONE the Chopin *Funeral March*? Are you eager, or resentful? Are you full of beans, or still full of brandy? Did you kiss your Kate goodbye or slam the door on your heels? Do you know you're in good time, or sure your watch must be running fast?

If you answer *yes* to the first half of each question, score yourself 100 percent ready for a good day. If you answer *yes* to any second half question you're begging for aches. The mental attitudes with which we start the day influence the way it ends. No time is the best time for quarrels and resentments, morning is certainly the worst. You begin your day with two strikes already called on you. Your nerves are tense and lactic acid is already collecting in your system.

WALKING

A good walk helps get bile out of both mind and muscle, but don't expect this walk to suffice for your day's exercise. It will do something for your feet, legs and thighs, but it won't substitute for good abdominal and back exercises. It will also give a shove to circulation . . . that same circulation that shoos the poisons out of you.

An amble won't do it. Walk at a fairly brisk pace. One half mile is just about the minimum that will benefit you. If you live within two or three blocks from your business don't expect anything but your ego to be boosted by your boast of "I walk to work every day." Even if the work is too far away to walk to, walk the first half mile.

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Or the last. But the first is better Once riding it's hard to stop!
And walk like this

- 1 With your body in correct posture as described in Chapter 3
- 2 With your step rhythmical and free Not the mincing trot of the miniature terrier Pretend you're a Great Dane and swing along as though the earth weren't big enough for you
- 3 With the feet pointing straight ahead, neither toeing out nor toeing in
- 4 With the weight on the outside border of the foot. (See Chapter 8)
- 5 With correct foot action a sort of rolling motion First the heel touches lightly next the entire outside border, then the ball and toes push off from the surface.
- 6 With the forward knee slightly bent and most of your weight momentarily on the forward foot.
- 7 With the rear leg swinging forward freely from the hip joint the knee slightly bent.
- 8 With the body balance held by thigh muscles, and gripping with the feet.

Complicated? Yes it is. Just the same that's how you walk when you do so correctly, even though you're unconscious of it But do you walk correctly? Go through these motions at home. You'll find most of them familiar for even incorrect walking must use some of them. Have someone watch you. Tell him to jack you up when your weight rolls to the inside of the foot or you start thrusting your head forward or pointing your toes at an angle But one practice period won't endow you with a good walk especially if you've already formed pernicious habits Keep it up Once the fundamentals are mastered a good walk becomes as natural as good manners. Though you might well be warned that you'll never master the fundamentals unless your shoes are somewhere near right.

You can check on yourself when you walk where you pass reflecting shop windows Watch in them for these common faults

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1. Body out of alignment when foot swings forward ahead of the body mass You have this fault if the window shows your body tilting back The entire body should move forward with the beginning of the foot's forward movement. If it does, the plumb line will fall correctly even when you are in motion
- 2 Hip joint swinging too far to the side, out beyond the plumb line This happens when you flex your knees too much when you step Or if the gluteus muscles' tone is soft.
3. Leading with the chin You won't get there any faster even though your chin does go through the door first and it's a sure recipe for base-of-neck aches.
- 4 And any of the many faults resulting from poor posture!

This book pays little mind to aesthetics, but two walking habits err sufficiently from that side to deserve mention even though they don't really do you bodily harm Swaggering is one of them . . that sort of rolling shoulder prance that seems to say, "See what a fine fellow I am!" This is probably less offensive in the male than the female, fortunately, therefore, it is less often seen in a woman's walk But women make up for this lack with another just as objectionable fault, the wagging *derrière* Generally this is not a cultivated posture but a result of slack gluteus muscles

DRIVING

Your business is too far to walk to, so you drive your own car Or you ride as a passenger with a friend or in a taxicab We'll look at the driver first

In the next chapter, intended specially for the person who sits for long hours at a stretch, the fine points of painless car-driving will be discussed Any driver can profit from that section, but some of its suggestions are unnecessary for drive-to-workers who travel comparatively short distances This much, however, applies to anyone who drives

- 1 Sit with lower back pressed close to the back of the seat

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- 2 Sit erect, stretching up from the hips so abdominal muscles won't slump
- 3 Keep head back rather than forward.
- 4 Relax the shoulder muscles so shoulders won't hunch

Watch your nervous tension as well as the speedometer. A drive-to-worker invariably hurries, fearful of missing a train or first appointment. Other drivers just like you clog the road. They're thinking just what you're thinking, with You as the object of their disaffection. It won't get you there any faster, so what do you net when you fume and fulminate and honk your horn? Just a case of upset nerves—a fine culture for growing a batch of aches.

New York City taxicabs carry a sign that tells the passenger "Avoid Injury **SIT BACK—RELAX—ENJOY YOUR RIDE.**" The capitalized portion makes good advice for any car passenger whether there's a taxi chauffeur—a husband or a wife at the wheel. Tenseness won't stop an accident or make it easier to take if it happens. On the contrary, you've more chance of injury when tense. If an accident doesn't happen, you've started your day with a cordial invitation to aches.

SIT BACK, your lower back firmly against the seat back so your upper back is supported. Be erect from the seat up, feet flat on floor, head up, shoulders and neck loose.

RELAX, with body riding with the motion of the car. It will, easily, if it is in balance and unless you are tense. Jolts, bumps and sudden stops shock you less when a relaxed body rides with the car movements instead of fighting them. Proper sitting posture and relaxed muscles have saved many a person from severe injury when an accident happened.

ON THE TRAIN, TROLLEY, AND BUS

Patrons of public transportation services must generally stand and wait for their conveyance. Use these minutes to practice your basic standing posture. Here's hoping you get a seat when your conveyance arrives, but even if you do you're handicapped by the type of seat you get. When it's so crowded that you must "sit on infinity" between

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other passengers, you might better stand That on-the-edge-of-the seat position puts terrific strain on leg and thigh muscles even if the ride is smooth

Should you be so fortunate as to get sufficient space for Gluteus Maximus, sit as nearly like in a chair as you can Your weight should be squarely on your buttocks, feet flat on the floor, abdominal muscles pulled in and up, back straight and shoulders relaxed Then ride with the motion of the conveyance When it sways, sway with it When it goes round sharp curves at high speed, don't fight centrifugal force You may win for the moment but the force will retaliate with tired muscles

But you didn't get a seat so you're hanging to an overhead strap or handle Keep your upper arm slightly contracted The muscles are then already in partial action and alert to balance you against jolts and jerks Space your feet six to eight inches apart Even more if there's room Learn to grip the floor with feet and leg muscles A heavy set, awkward looking woman was standing in a swift moving rolling New York subway train without benefit of support Curves and change of speed never once disturbed her poise We both left the train at the same stop and I couldn't resist asking her how she kept her balance so beautifully "I've had to ride this subway for years," she told me, "and I've learned to grip with my toes "

If your knees are slightly bent, shocks will be absorbed more readily (That's a tip for elevator riding, too) Divide your weight evenly between both feet and hold the body erect Then practice the trick of the sailor on the high seas and let the body give with the motion While the neophyte passenger lurches and staggers with each roll of the ship, the sailor paces the deck with even rhythmic step He knows better than to fight the ship's sway, he lets his body go with it (But when you get your feet back on the pavement, don't adopt that characteristic rolling gait that identifies the sailor still seeking his "land legs ")

In holding to a seat-back or a vertical pole, stand like the strap-hanger and grasp your support firmly so you won't pitch unnecessarily This is no position, either, in which to try catching up on your

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reading Keep your attention focused on the business of maintaining the body in balance and prepared for sudden stops and starts.

These are all little things So are grains of sand. But fill a wheel barrow with the little grains and unless you handle it right, you can strain your back trying to trundle it.

SITTERS VS. SETTERS

12

THIS CHAPTER IS DEDICATED TO YOU PERENNIAL ACHERS WHO SIT all day. It is intended to demonstrate how to be a sitter rather than a setter, and I am not referring to grammar or dogs, but to those positions that set the muscles in abnormal contortions, that set up strains and stresses, that set the sitter on the path to aches.

Sitting all day goes against nature's grain though we ourselves may like it. Nature intended us to walk and to run, to climb and to jump, to avail ourselves of *all* muscles instead of just a few in the extremities. When we rest on our haunches all day, we thwart that intention. Nature retaliates with both physical and mental disturbances.

The typist, the accountant, the sewing or adding machine operator—how they groan with the aches between the shoulder blades, in the back of the neck and the upper arms.

Tense neck muscles plague the high-powered executive, tense nerves stab him with migraines. (Or stab *her*, for doctors report that as women have assumed men's duties in the executive field they have also assumed his ailments.) High blood pressure too often rewards the executive for his ability. His inactive circulation neglects to carry off the fatigue poisons aggravated by nervous tension, the heart must pump harder to increase that circulation.

A switchboard operator complains of constipation, the blame falls on weak abdominal muscles. An art director takes pills for a sluggish liver, sluggish circulation in the large muscles is the culprit.

Aesthetically, too, sitters pay for their ease. With women the coin is that increasing measurement about the hips called "middle-age spread" (but called so erroneously for it doesn't postpone its appearance until middle age), with men, a surreptitious pushing of the chair further and further back from the front of the desk. A certain doctor sits all day prescribing reducing diets and exercises for his patients, but was resentfully incredulous when his wife announced that the last possible gusset had been put in his evening trousers.

This book, however is more concerned with pains than with gains, and you have arrived at your work prepared for another day of uncomfortable sitting. Here's your chair. Let's stop a moment before you sit to see if possibly it contributes to your aches.

CHAIR AND CHASSIS

Considering your physical comfort, that chair is the most important object in your working area. Does it suit you? Is it built to accommodate your particular proportions with a minimum of strain? Few can answer "Yes." Chances are you inherited it from your predecessor. If it was purchased new for you, the order probably read simply, "One chair." Thus you may find the seat too high for your short legs or too low for your long ones, too deep or too shallow for your measurements from hips to knees too flat for an easy adjustment of the pelvic area. Too bad for your muscles! They strain all day trying to make your body fit that chair.

What can you do about it?

Take time some lunch period to decide what the chair needs to make it kinder to your body. It should be of such height that you can place your feet flat and firmly on the floor. If you can't, tuck a low stool or block of wood under them. If your legs are long and your knees continually reaching heavenward, raise the seat of the chair with a cushion. Have it firm rather than soft, and not bumpy. If the chair seat is too deep for your thigh length, your lower back won't touch the chair back when your feet are on the floor. It should. A firm cushion will fill in that vacancy too. Usually one about two inches thick suffices.

YOUR ACHES—WHAT TO DO ABOUT THEM

A word about those swivel chairs that fascinate many office workers. The only good word that can be said for them is that they are adjustable to height, and their bad points offset this a thousandfold. They encourage one to sit on the end of the spine, to put feet atop the desk. Their soothing rocking motion in which many take comfort is definitely dangerous. Many a user of a swivel chair has rocked too far and ended with strained ligaments, a twisted shoulder or a fractured finger. A physical director who should have known better tipped over in one of these chairs and fractured a vertebra. Unless you are looking for more trouble than you already have, steer clear of swivel chairs.

SITTING AND RISING

So much for the chair. Now let's see how you sit down in and get up from one. Get the unbiased opinion of your full-length mirror when you try this.

Place a chair sideways in front of the mirror. Approach the chair and sit yourself on it, keeping your eyes glued on the glass. (Do this right away before reading further.)

Now, I've never seen you in my life, but I'll bet with you. Unless you have had dramatic or so-called "deportment" training, you approached the chair boldly enough, but ultimately arrived at it with a sort of sideling, crabwise movement. You placed both hands on your thighs and reached for the seat with your *derrière*, upper torso listing forward at a 45-degree, down-by-the-bows angle. You got there safely, thanks to your back muscles and considerable gravity. But you didn't arrive gracefully or efficiently. Grace and efficiency demand action by thigh muscles and knees.

Still eyeing the mirror, get up from the chair. Ten to one you leaned forward, hands on thighs, head and neck protruding in fine imitation of an alarmed turtle. Then heave ho, my hearties! And up you came with a lunge and a larrup.

Are you thinking it doesn't make any difference in your aches and pains whether or not you sit down and rise gracefully? Let's do it right this time and you'll see that it does.

SITTERS VS SETTERS

Walk toward your chair

Stop with right foot and leg close to the front of the chair

Pivot on the ball of the left foot, keeping the feet three or four inches apart.



With the body upright and head erect, lower your self onto the chair, using the muscles of both legs. Let your hands go wherever they feel easy and natural but don't push with them.

Now for some real practice. Stand in the correct position back to chair. Lower your body up and down several times not quite touching the chair seat. Feel those thigh and leg muscles? Certainly they hurt! They're protesting. They've not had that much exercise in years and these are muscles that de-

teriorate quite rapidly. You have been overusing your back muscles and pampering your leg muscles in the two simple operations of sitting down and getting up.

Work at these up and down movements each day. They will strengthen thigh and leg muscles so that eventually they will cease protesting. They will keep knee joints functioning smoothly. They will help eliminate the strain you've been putting on your lower back. And one tip to lady sitters: since undoubtedly you are interested in appearing as graceful as possible keep your knees fairly close together when you walk up to a chair and sit down. Wide-spread knees make any sitting movement and position ungraceful.

You now know how to get into and out of your chair and save yourself strain. Next, how to sit in the chair once there.

Don't Quit Sit!

You sat down in the chair with body upright and head erect. Keep them that way! Don't be like the boss over there though he's not fat, as usual his abdomen is bulging below his belt. Or like Miss X, her favorite position is lolling on the lumbar. Don't copy young Mr. Y, either his shoulders sag as though all the boss's headaches were piled on them.

YOUR ACHES—WHAT TO DO ABOUT THEM

No wonder the boss suffers from indigestion, Miss X boasts continually of her sacro-iliac; and Mr Y is developing a hollow cough.

Don't you be too smug yourself! A candid camera might reveal you in one or more of those poses at various times of day. Plus several others equally productive of strain and stress. Don't you ever twist one leg about the other? Or tuck both of them back under the chair with ankles embracing the chair legs? Almost everybody does occasionally. Too many do it habitually.

Some men like to sit with their feet on top of the desk or propped on a drawer. Use it for a rest position, if you must. Regular use is almost sure to stir up troubles in the lower back. In that position you are sitting on your back instead of on your sitting muscles.

To describe all the incorrect and pain-producing sitting positions would make a book in itself. Forget about the wrong and concentrate on the right. You know what it is. You learned it back in Chapter 3.

Correct sitting position puts no unnatural strain on any muscles. You may feel strained until you grow accustomed to it, because former bad habits have pampered the muscles you are now using. Stick it out. Your new aches will disappear and so will your old ones, provided, of course, you remain faithful to the exercise routine outlined for your special aches in earlier chapters.

Don't Shirk at Work

But you can't sit at ease all day, you have work to do at your desk or table. Do you do it in a position suggestive of the punctuation mark at the end of this sentence? That means with shoulders hunched about the ears, head thrust forward turtlewise from the seventh cervical. The chest is hollowed, the abdomen slumped and crowding its organs like New York subway passengers, and the end of the spine is used as a sitting base. If that's the way you work, no wonder you ache!

Change to this position.

- 1 Assume your correct at-ease sitting position, firmly based on that comfortable gluteus muscle

SITTERS VS SETTERS



2. Bend forward from the waist.
3. When you place your arms on your desk, don't hunch the shoulders.
4. To look at your work, lower your head from the base of the skull, well above the seventh cervical

That seventh cervical position not only prepares you for the dowager's hump (which isn't confined to women), it also strains the ligaments and muscles in the back of the neck. It is important to keep those muscles as relaxed as possible if you are to avoid aches in that area. You'll find you work better, too, in the correct position. Relaxation permits circulation to flow more freely. Both mind and nerves will then function with greater ease.

Now you know the two basic positions every sitter must practice if he seeks ultimate comfort. Nearly every sitting job, however, poses some auxiliary problems that cannot be met by either one of the basic positions. One of the most common and potentially dangerous is how to manage the heavy drawers of file cases or desks.

Drawer Techniques

If everyone had well-developed back muscles, these suggestions would be unnecessary. Since everyone hasn't, heavy desk and file case drawers cause lots of damage to back muscles.

Here is the most nearly strainless technique for managing drawers of large file cases. For waist high or higher drawers stand facing them squarely, back straight. Use both hands to pull out double-handled drawers. On single-handled ones pull evenly so the body doesn't twist. Use alternate hands—the right this time, the left next time.

For drawers lower than waist height, squat. Or place one knee on the floor beside the other foot. Keep back straight and pull evenly.

The really pesky drawers, though, are those deep affairs found on one side or both of many large office desks. Actually one should

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PBX Operators

One of the hardest, most nerve-racking jobs in any office is held by the PBX operator who so often doubles as receptionist. Occasionally you see her sitting there with nothing to do and perhaps you envy her. Doing nothing is difficult. Then, next moment, all the lights on the board flash and visitors are queueing up beside her window or desk. Which shall she take care of first—visitors, who may be important clients, or signals from impatient bosses?

Mental poise is one of her most necessary attributes. Without it she is the prey of her own nerves and of those of the people she serves. One such New York City operator told this story that well illustrates the importance of serenity in this type job.

She had been in a new office only a few days but had learned that one of the places frequently called was the *New Yorker* magazine. So when a light flashed and an executive said, "Get me the *New Yorker*," she dialled the magazine and put the executive on. In a moment his light flashed violently. "I don't want the *New Yorker* magazine," he spluttered. "Get me the *New Yorker* hotel." The new call was put through and the conversation completed. Some fifteen minutes later the executive's voice again demanded, "Get me Mr Waldo Wishbowl at the *New Yorker*." The new operator dialled the hotel and was duly informed that no Waldo Wishbowl was registered there. She called her executive. "Mr Wishbowl is not registered at the *New Yorker*," she told him. "Shall I try some of the other hotels?" "Hotels!" he replied. "What do I want with hotels? I want Waldo Wishbowl at the *New Yorker* magazine."

It could happen to anyone, but such things happen frequently to the PBX operator. So many people have so little consideration for her. That's why she's so often tied up in nervous tension knots, why she is so often afire with the aches of tight muscles. She of all workers in an office must know how to relax and practice what she knows. The *Slump-and-Stretch* exercise on page 121 is especially good for her when that tautness around the shoulders starts nudging her. A few turns at *Rock-a-Bye* (pages 120-121) will help, too.

A Word to the Typist

The typist who lacks a regulation typist's chair needs to read and read again what has been said about the right chair and how to sit in it. Maintain correct sitting position except for an occasional rest. Then slump if you like, but you soon won't like. Once the correct position becomes a habit, you will be far less tired at the day's end.

When transcribing shorthand or copying other material, remember to shift your material occasionally from one side of the machine to the other. This caution is less for the expert typist than for those advertising copywriters, publicity writers or authors who use the well known "hunt and peck" system of typing. The expert typist need do little more than keep her eyes fixed on her notebook. But the less skillful who must continually move heads and sometimes bodies from copy sheet to keyboard can easily set up aches in one side of the body. Alternating the side divides the strain.

To the Dictator

A nervously upset stenographer can complicate the life of a dictator. Be sure as dictator, you are not the cause of your stenographer's nerves. You can contribute much to her calm and eventually your own if you mind your dictating manners. When you mumble your words, chew on a cigar or a wad of gum, or pace the office boundaries as you dictate, she has difficulty understanding you. Small wonder she is in a state of nervous tension knowing how you are going to fume if she misses out on a single comma.

Relax! Sit down in the correct sitting position and give full attention to the matter at hand. Then she can relax, too. At her ease she'll take down your gems of wisdom faster and more accurately and be saved many of those nervous tension aches.

Relaxing on the Job

Whatever the job, try to make each break in your work a time for relaxation. Not just to go to the washroom for a cigarette but to

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apply some active counterirritant to the muscle or nerve strain you have been under

Just the simple change of getting up out of your chair and walking about helps. It helps more if you'll raise your arms as you stand and stretch both the body and the arms. While up on your feet, let the upper body drop forward, going as limp as possible, then returning slowly upright.

The following relaxing exercises are easy to do while still seated. They can be done more or less inconspicuously, too, though there's no reason why they should be. In fact, it might be better to do them conspicuously so other workers may see and profit thereby.

Twister

Do this either sitting or standing

- 1 Raise arms shoulder high out to sides, forearms bent upward



- 2 Force shoulders backward without hunching
- 3 Holding this position, twist body slowly as far as possible to right
- 4 Twist body to left
- 5 Drop arms and upper back forward, completely relaxing muscles
- 6 Repeat a few times

Rock-a-Bye

- 1 Drop head forward on chest.

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- 2 Pulling with the muscles in the back of the neck, rock bead up and down
- 3 Tip head back and look at the ceiling.
- 4 Repeat a few times

Rock-a Bye Encore

- 1 Place hands on back of head.
- 2 Rock bead up and down, lifting chin slightly from chest.
- 3 Repeat a few times.

Slump-and-Stretch

- 1 Sit forward in chair and round the back.
- 2 Pull in abdominal muscles
- 3 Force head forward from back of neck feeling all muscles in back.
- 4 Sit up straight and stretch upward from base of spine to top of head
- 5 Repeat four or five times.

There is a special kind of sitting job to be discussed now. It may not be a daily job. In fact, it may not even be the real job but a necessary accompaniment of some other kind of work. It is driving a car.

DRIVING A CAR

Besides chauffeurs and bus, taxi and truck drivers, more and more men (and women, too) must make day long or longer trips at the wheel of a car. On cross country vacations, for instance. Or as the method of covering an itinerary as salesman, demonstrator, investigator. While it lasts, such driving is a job. The skilled driver does it with ease and relaxation. He arrives at his destination, be it two or three hundred miles away, fresh and unperturbed.

This takes management—of muscles and of nerves. Driving requires constant attention to the road, constant alertness to the whims of other drivers, children and animals. Though the muscular system performs comparatively few voluntary actions, it is continually stimulated by the nerves.

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The skilled driver may skip the next few paragraphs. He doesn't need what is in them. But the unskilled driver, who is fagged out at the end of the day, will arrive less fatigued if he follows these suggestions

1. Sit with lower back pressed close to the back of the seat. You should feel a real support for the entire back.
2. If the seat is too far back for your feet to reach the operating pedals easily, adjust it forward. If it is not adjustable, use firm cushions at your back.
3. Sit erect. Stretch up from the hips so the abdominal muscles won't slump.
4. Hold the head back as though it were resting on a high collar.
5. Relax the shoulder muscles.
6. When you must bend forward, keep the back straight and bend from the hips.
7. Place the hands as low on the wheel as you comfortably can. When hands are continuously kept high, blood circulation suffers. Muscles and nerves about the shoulders grow tense and painful.
8. Loosen that death grip so many drivers take on the wheel. Hold it as easily as you can and still maintain control.

Even though you must arrive at a certain hour and need drive steadily to do so, you can have moments of relaxation. True, relaxing when the muscles are in action, even in such slight action as car driving, takes practice. You don't try it, of course, unless the road is comparatively clear.

When you feel stiffness creeping along the muscles from the skull base to the shoulders, watch for a stretch where you won't need both hands on the wheel. Then do this:

1. Take one hand off the wheel and reach round to the opposite side of the neck and shoulders.
2. With your fingers, massage the muscles from the shoulder joint to the base of the skull. Go up and down several times.

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- 3 Change hands on the wheel and repeat for the opposite side.
- 4 Now rub in a circular motion from just above the eye-brows out to the temples

These are easy manipulations. They stimulate the circulation and relax the muscles at the base of the neck and about the eyes.

If a few moments' delay isn't fatal to your schedule, stop and get out of the car when you begin to tire. Walk for a bit and do this

- 1 Stretch the right arm across the body to the left side as far as you can reach. You should feel the stretch in all of the back muscles
- 2 Stretch the left arm to the right side long and hard.
- 3 Clasp the hands on the back of the head and rock it forward and back a few times. *This is the same movement suggested for the office sitter on page 121. The Twister described on page 120 is good for you, too*

All perpetual sitters should study and work at exercises that strengthen back, shoulder and abdominal muscles, specifically those in Chapters 5 and 6. If your chest is particularly hollow, a common enough complaint of sedentary workers, do Numbers III, IV and V in Chapter 6. Persist with the sitting and rising workout that strengthens thigh muscles.

Don't let your week-end or vacation ambition run away with you (more on that in Chapter 17) at least not until you've guided back and leg muscles into paths of righteousness. Above all, don't get discouraged if your progress is slow. It has taken you far longer to build up those aches than it will take to tear them down.

YOUR ACHES—WHAT TO DO ABOUT THEM

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STANDING ROOM ONLY

13

STANDING ALL DAY VEXES NATURE ALMOST AS MUCH AS ALL DAY sitting Almost as much, in fact, as it vexes you for whom this chapter is written For you are a stander-at-work and a static stander at that one confined to small space with little chance to move about

It is true that nature planned for all muscles to be used, and standing uses practically all But nature did not intend that all muscles be used at the same time and continuously That is what your kind of standing does

The original scheme had sense It proposed using now one group of muscles, now a different group In between their work sessions, rest periods were to be sandwiched Static standing completely disregards this scheme A majority of your six-hundred-odd muscles must labor unceasingly and simultaneously just to maintain you upright

The man who digs ditches stands, too, but his work brings into play a variety of muscle groups, each at a different time The strain is distributed and one set of muscles relaxes while another set toils That arrangement pleases nature and if the ditch digger obeys the laws governing how muscles are to be used, far fewer aches plague him than afflict you In your job no muscle has much chance to relax and to rest, all remain in a constant state of contraction without the real activity that inspires circulation to hustle off the fatigue poisons

Yes, the static stander lives a sorry life, and static is just the right

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name for it. Not only are static standers unable to move around freely, but they say that the pains shooting through them tingle like electric shocks.

Department store salespeople checker-cashiers in self-service markets, bank tellers they sigh of aches that sear their lower backs and scarify their legs then add a chorus of "And oh, my feet!"

Twinges and twitches rake hairdressers' shoulders and their feet. Kinks knot elevator operators' necks and their feet. Ticket sellers' headaches aren't all on the opposite side of the window, they actually furrow the forehead and the feet. *Especially the feet*. They burn, they prickle, they swell *they hurt*. There are days when for two cents you'd lop them off and pickle them.

Well, it's your job and you're stuck with it. Might as well make the best of it, for even the best is none too good. Let's see if you *are* making the best of that limited working area.

In one way you're really better off than the sitting worker whom you probably envy. You needn't contend with chairs that don't fit you and you can't assume sitting positions that defeat the best of muscles. If you fail to give your muscles all the moral support they need you have—not a chair, not a desk—but only yourself to blame. Yourself, that is, AND your shoes.

Yes, at least half the *feminine* stander's troubles start before she ever arrives at work—way back in the shoe shop. In fact, I italicize the *feminine* stander. Men standers seem more enlightened on their need for proper shoes, but I am continually horrified by the many women who work at standing jobs wearing pumps, sandals, open heels, high heels and even run-over high heels. How can they—or is it you?—expect to stand painlessly? Chapter 8 said plenty about shoes and what they do to the feet. If you skipped it, backtrack now. And all along it's been emphasized how aches in feet are reflected in legs and back.

When you went into that shoe shop did you say to the salesperson "Look, I have to stand all day. I want a pair of shoes that give me a firm base and support me in a better way than I'm accustomed to. I want plenty of room for my toes so I can wiggle them and keep my

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circulation up I want a straight inner line because I've got enough troubles without adding bunions to them I want a soft pliable leather because I don't want corns And I don't care if I don't see them illustrated in a fashion magazine "

Some of you did say just about that and you're wearing the broad and low-heeled, wide and round-toed oxfords every stander should wear What if they are ugly! It's your smile, not your feet, that's seen when you stand behind a counter or grille or in the corner of a crowded elevator If you're so vain, wear a prettier pair to and from your work and make your changes at your place of business It doesn't matter if you have worn pumps and high heels all your life You *can* lessen your aches if you change to properly built shoes Not overnight, though For a while your Achilles tendon and the calf muscles will be mighty sore at the way you've let them down If you'll suffer it out, I can just about guarantee that you'll be sending me a thank-you note in a very short time If you refuse to conform, you might as well resign yourself to an autobiography that's one big ache

Now mind you, there's no guarantee that a change of shoes will cure all the aches you have In fact, already I hear the babble of, "Well, I wear shoes such as you recommend but still my legs and back ache "

We're getting round to you right now You've punched the clock, the doors of your establishment have opened, your clients are pouring in Get into your cage, your coop, your cubicle, behind your counter or your window and let me see how you stand

Let's hope it's not like Miss Cashier She's famous for throwing her weight around and already she's relegated it all to her right foot Her daily dirge laments her lumbago

Look at Mr Hairdresser He's pinned his knees back till his calf muscles are tight as the curls he's making Every night his wife must massage his legs to get the cramps out of them

Mr Bank Teller holds a mortgage on the shoulder sag Before closing time he'll be wondering if the pain in his upper back is going to liquidate him

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And Mrs. Saleswoman It's funny, isn't it, that it never occurs to her that the dragged-down feeling she has all the time in her innards may be aggravated by letting her abdomen bulge below her belt. She really should be careful. She's not as young as she once was. When you stand all day the circulation becomes sluggish and tends to collect in the abdominal region, the legs and the feet. You're not helping it get going when you allow abdominal viscera to drop and cramp other organs. Mrs. Saleswoman has been so uncomfortable lately, she ought to see her doctor. Some real trouble may be brewing.

Now all these people know how to stand. *And so do you.* Chapter 3 went to considerable pains to detail correct standing posture. Do you remember the directions? Briefed, they went like this: weight on both feet and rolling to the outer edge, abdominal muscles pulled in and up, knees relaxed, back straight and head erect, shoulders loose but held back by the muscles between the shoulder blades.

Well, why don't you stand that way? Like the human being you're glad to be instead of like a chimpanzee. Of course it will tax your determination at first. And you'll ache like all get-out in brand new places during the training period. But wouldn't you rather have a few new aches for just a few weeks than all your present ones for all the rest of your days? At least the new aches would offer a bit of variety.

Please understand something right now. It is a waste of your time to read one word further if you are not willing to wear proper shoes and strive to stand correctly. All the other tip-offs and suggestions to be given will avail you nothing unless shoes and standing posture are correct. And you can do the exercises from now till kingdom come without relief unless you put to use the new strength they give your muscles.

Making Motions

Though you are a static stander you don't stand there like a stick all day. You do have your moments when head or arms or back or feet make motions, slight though they may be. Make them as easy

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for yourself as you can. Don't add to your muscles' burdens by movements that worry them more. Start off by standing—correctly—as close to your counter or working area as you can. That injunction, however, does not include the right to slump against your counter. When you are taking in or handing out cash, displaying merchandise, wrapping up a package, or performing mechanical operations, you shouldn't need to strain forward from chest or shoulders to reach your working area.

When you must bend forward, how do you do it? From that quarrelsome seventh cervical? Upper back humped like a camel? It's so easy to do it that way—and so disastrous. It's just as easy, once you've set your mind to it, to bend from the hips keeping the back straight. Much more conducive to the comfort of your upper back, too.

If low-down drawers or shelves harbor part of your wares or working tools, you're lucky. You exercise leg, knee and thigh muscles when you go after them. Only, though, if you do it properly. Practice a deep knee bend with, as usual, a straight back. Deep knee bends will needle the slowing circulation in the leg muscles, help work some of the fatigue products out of them. Naturally you can look forward to temporary new aches in these muscles if you're unused to bending that way. Go after those leg and thigh exercises in Chapter 7.

Do you imitate a corkscrew when you turn from working area to cash register, change tube, telephone, merchandise drawers or shelves? Do a complete about-face so your entire body squares with the machine or instrument you must use. It takes no more effort, and usually less than one of those muscle-torturing twists. Those twists can play all sorts of painful tricks on your back.

Weighty Problems

Now, what about your weight? You'd rather not talk about that? Then don't talk about it, act on it instead. We had a little conference on this matter in Chapters 7 and 8. You know you're not getting any exercise on your job to burn up the extra carbohydrates. Plan your schedule to include a daily exercise period. And watch your diet. You can exercise till you fall flat on your face and still be fat, if you simply

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replace burned carbohydrates with a fresh supply. Don't fool around with one of these faddish reducing diets, either. Get one your own doctor designs for you, or at least get his approval of the one your friends suggest.

HOW TO RELAX

Every so often a rest period comes along. And do you anticipate it! You can hardly wait for your cigarette and coke. When you get them, sit down with them, but do try to save a few moments for actually lying down. You say your restroom doesn't have a bed? It has a floor, hasn't it? A floor is just as good as a bed for what you should do. You can spread a newspaper on it if it's dirty.

Take off your shoes. Get your feet up higher than your head. Chairseat height is good. Flex them up and down and around. Wiggle your toes good. Relax for a moment and then go through the same motions again. Repeat them a third time.

Unglue your neck and shoulders, too. Take a leaf from the sitter's chapter just preceding this and do these relaxing exercises: *Rock-a-Bye* and *Rock-a-Bye Encore*, *Twister*, *Slump-and-Stretch*. They're on pages 120 and 121. Never neglect these exercises. And NEVER neglect them if neck and shoulders ache.

You can even do some relaxing while at your work station, especially when the job keeps your lower half out of sight. Of course you're going to keep your good posture most of the time, with your weight evenly balanced on both feet. Now and then—though not habitually—shift this evenly balanced weight so it rests first on one foot, then on the other. You can do it so your good posture isn't ruined. Just lift one heel and let your knee bend slightly. Now the same with the other foot. Then the first one again. Alternate your feet five or six times but without letting the hip jerk out on the weight resting side. Then back again to your firm two-footed stance.

It will help, too. If occasionally you take your weight on one foot, lifting the other foot completely off the floor, shaking it and flexing your ankle round and about.

As soon as you reach home, relax on your bed on your back. Ele

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vate your feet. Remain in this position five or ten minutes. If your feet swell or burn, soothe them with alternating hot and cold water plunges or sprays.

NERVE TENSIONS

The opening chapter of this book touched briefly on mentally-induced aches and Chapter 2 elaborated on them. The static stander needs to know all he can about the effect of our emotions on our physical selves. In his relations with people and his attitude toward his job, the right emotional slant is more important to the stander than to many other workers. Why? Because of the tensions unpleasant emotions can set up and the difficulty the stander has of working off these tensions by physical activity. Most static standing jobs are service jobs. You are doing something for other people. The other people, unfortunately, are not always pleasant, tactful or courteous. Yet you must be. You must bottle up the choler that bubbles in your veins, choke back the smart retort that trembles on your tongue. That is frustration, creator of tension. The other people are ever in a hurry and rush hours call on you to coordinate quickly and correctly several different physical and mental activities. Nervous tension results. Since you have no way on your job of working off these tensions, you must learn to subdue them.

It is difficult at times, as Chapter 1 pointed out, to know if an ache starts first in mind or in muscle. A strong body resists longer the aches that start in the mind, the ones induced by nervous tensions and emotions. When muscles are strained and body organs cramped by incorrect posture, aches will molest you. Aching, you will find it harder to meet unpleasant situations with equanimity. All static standers should be faithful to exercises that use the large muscles. Make a habit of those given to strengthen back (Chapter 5), chest and shoulders (Chapter 6) and feet (Chapter 8). For relaxing those tired nerves, use the set of six in Chapter 19.

WALKING RECEIVES NATURE'S BENISON AS EACH LARGE MUSCLE OF the thighs, legs and lower back ripples into its task, nature nods approval. The circulation hastens its pace, its sprightlier rhythm puts poisons to flight. Oxygen pours in to replace cast-off carbon dioxide. All body organs begin to function with the precision of the perfectly adjusted machine.

Why, then, does the house-to-house salesman sigh and mop his brow as he faces the next block on his route? Why do you catch the opinion-poll taker dissolved in tears on the stairs? What makes the postman mutter crazily to himself as he rings your doorbell twice? Why, at the end of the day, does the department store floorwalker feel as wilted as his carnation? What makes the social service investigator so sure that she herself will be her next case? Nature would seem to enjoy contrary moods, approving the pursuit in which all these workers are engaged, yet wreaking vengeance on them for engaging in it.

For the answer we must look again, first at our early origins, then in our own mirrors. Walking is fine for us. Aside from swimming, no other physical activity gives the large body muscles such natural exercise. But the conditions under which working walking is done and the ways we do it are what turn nature's smiles to frowns. Human progress makes it impossible to change the conditions. Hard pavements jolt and jounce the spine of the outdoor walker. Lack of fresh air limits the oxygen needed by the indoor walker to replace

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much of the foot as possible on the step,
not just the ball

- 2 Let the weight rest on this forward leg so the body mass is in alignment with the forward foot, neither held back nor pushed ahead
- 3 Without swinging the pelvis, raise the body upward with thigh and leg muscles
- 4 The rear leg will straighten of its own accord As it does so, take care not to thrust it back forcibly
- 5 Move the rear leg upward and forward to the higher step The foot comes down flat on the step



Go through the above motions slowly Did one or more of the actions feel unfamiliar? That is because your familiar actions have not been correct If you are accustomed to placing only the ball of the foot on the stair, it will feel awkward and flat-footed to place the entire foot on it You may have been giving a sort of push-off as you rise, forcing the rear leg out in back on the take-off Lifting instead of pushing with this leg will then give you a pulling sensation through its muscles This is fine, for it means you are making the right motion

Concentrate on keeping the body erect and properly balanced over the forward foot The actions of legs and feet will then start taking care of themselves Eventually the right actions will become as familiar and easy as the wrong ones have been

Down You Come

In coming down stairs, practice as follows

- 1 With back straight and head erect, let the ball of the descending foot strike the step first, with the rest of the foot following
- 2 Straighten the forward leg
- 3 Bend the rear leg sharply at the knee as it starts coming downward

WALK OF LIFE

- 4 Point toes straight ahead with weight on the outside border of the foot as in level surface walking
- 5 Keep body balance directly over the forward foot.
- 6 Avoid swaying from side to side through the pelvis

If the stairs are long and you begin to feel breathless or your heart beat speeds up noticeably, stop and rest. Do the same thing if your leg muscles pain considerably. Remember, too, that carrying heavy equipment up and down stairs may require some adjustment of the carrying method used on a level surface. If it tends to pull your body out of alignment, shift it temporarily to a more advantageous position.

Weather Report

It has always been a matter of great curiosity with me where New York City traffic cops cache their raincoats. Starts a sudden down pour and seconds later every one of New York's Finest from Bronx to Battery is swathed in rubber.

Would that the outdoor walker could pull one out of his hat as quickly. Many an ache could be saved.

You can get the weather report before you start your travels. A turn of the radio dial tells all. Now you know whether to wear a light suit or a heavy one, a topcoat or an overcoat, whether to stuff a pair of rubbers in your brief case and hang an umbrella over your arm. Don't burden yourself with coats and jackets you're not going to need. They only add to the load on your arms. Don't get caught without them when you need them. Either.

Those instructions pose a pretty problem. Weather changes and weather reports sometimes miss the mark. You are continually in and out of buildings from the cold outdoors to the warm indoors, from air-conditioning within to 90 degrees without. The sun shines when you enter and the sky weeps when you exit. On a doubtful day can you locate a spot within the territory you propose to cover where topcoat or raincoat can be left when not needed and conveniently picked up when you want it? It does you no good to get soaking wet from either rain or perspiration and continue your job with wet

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clothing Or to exit from a heated building into a sudden temperature drop with no means of protecting your muscles

In cold weather the walking worker shouldn't need as warm clothing as the person who walks only occasionally or for short periods If you habitually walk correctly and briskly your free-wheeling circulation and a lighter coat should keep you fairly comfortable But get that coat off as soon as you go inside so you'll not be over-warm when you come out Muscles resent sudden chilling just as they resent being quickly pushed into work without warming up. Always remember that warm temperatures help muscle contraction and cool ones obstruct it Muscles resent chilling in warm weather, too, as many a perspiring movie entrant has discovered on exiting with a stiff neck from an overly air-conditioned cinema So beware of drafts when you stop to rest at the soda fountain or lunch room

The Indoor Walker

The men or women who walk indoors deserve the privilege of complaining Their walking can hardly be called a normal healthy walk Either they scurry like the waiter or stroll like the store floor-walker, and do both without benefit of fresh air

If you're an indoor walker, watch your shoes, watch your posture and watch your weight If you're a man, keep your shoes light and their leathers soft If you're a woman, keep your heels low Rubber heels will relieve the spine of some of the constant jar

Holding the body erect and well pulled up from the pelvis compensates somewhat for lack of fresh air Then at least your lungs aren't squashed and crowded by other organs, they can expand to their fullest and take advantage of what oxygen there is

Keep a tight checkrein on runaway weight It's just that much excess baggage to carry along every time you step Rarely is it necessary to warn a waiter or waitress of this Too much beef on the tray, however, is as burdensome as too much on the body Be reasonable when you start loading up, then carry with straight back and erect head If you carry with one hand only, switch hands every two or three loads

WALK OF LIFE

Relaxation and Exercise

Indoors or outdoors the walking worker should try to rest frequently. Make an effort to rest in a chair, too. In a chair you can really let those muscles go limp, letting the entire body slump forward from the waist. Turn backward to Chapter 11 for relaxation ideas. It doesn't matter that they're presented for the sitter—they'll do as much for you. Make your exercise routine a combination of Chapters 5, 6, and 8. Those will take care of just about every aching inch of you.

HOUSE OF CORRECTION

15

HATS OFF TO THE HOUSEWIFE! YOU, MY FINE FRIEND, ARE A marvel You are all workers in one You stand and sit, you walk and sometimes run, you stretch and stoop, you bend and reach, you push and pull, you lift and you carry *And you ache*

Yet you have a God-given opportunity, if ever there was one, of keeping your muscle tone perfect Your duties and activities vary so widely that all your muscles come into play You can change jobs often, long before any one set of muscles suffers from overuse You can snatch moments of relaxation in between the tasks on your schedule

Do you take full advantage of your blessings? Observation tells me *no* Rarely do you whisk through your household tasks in the least strain-producing way Most of them involve the same general set of posture principles that have been repeated so many times stand, sit, bend, reach, lift and carry with straight back, keep shoulders relaxed and held straight by those muscles between the shoulder blades, hold the abdomen in and up If you observed these principles, you'd observe fewer aches

But certain tasks of yours invite special strain, so special care must be taken to side-step it You have a choice between the easy way and the hard way of accomplishing these duties If you choose the hard way, you put strain on your muscles even though your posture remains perfect So let's do these special tasks now . . . in the easy way.

HOUSE OF CORRECTION

Making Beds

You have a double bed. It stands smack against one wall. To reach the far side of sheets and blankets you stretch across the entire width. That's bad.

Locate the bed so you can get to both sides of it when you smooth up the linen. Stand close to the bedside so you won't reach out over a vacuum. Reach only as far as the center of the bed, walk around to the other side to reach the far half. When you bend over the bed do so with straight back and head in line. Keep your knees slightly flexed. In this position no strain falls on leg tendons and abdominal muscles pull in instead of slumping.

Turning a Mattress

I disagree with the old fashioned idea that a mattress must be turned every day. The mattress doesn't need it and the turning burdens your muscles excessively. Don't do it oftener than necessary and in my opinion once a week is all that's necessary. By all means get help with this job if you can. If you can't, do it this way:

1. Stand at the foot of the bed (or at the side, if today is the day for a side-to-side turn) and grasp the mattress with both hands at the bottom seam.
2. Keeping your back straight and weight evenly distributed on both feet, pull, stepping back with one foot. Bring the upper end as high as possible when you pull.
3. Lean the body back and throw the mattress forward as far as you can bending from the hips.
4. Reach underneath and grasp the mattress as far forward as possible without straining.
5. Pull the under end to the footboard.
6. Walk around the bed to straighten out the mattress.

Done like this your back, arm, thigh, leg and abdominal muscles all share the burden.

YOUR ACHES—WHAT TO DO ABOUT THEM

Scrubbing Floors

If you belong to the get-down-on-the-knees school when you scrub floors, watch out for "housemaid's knee" Use a pad under your knees Small sponge rubber pads, such as appear in gardeners' kits, do a good protecting job To kneel as in prayer is wrong You're bound to round your back that way, straining those upper back muscles

Get onto all-fours, with the back flat and the head up Place the water pail close, so you won't be reaching this way and that Confine your efforts to the immediate small space that you are able to reach without straining When that space has been scrubbed, move yourself and the pad and pail to the next small area Frequently change the hand in which you hold the scrubbing brush or cloth Even though you are not normally ambidextrous, you can scrub with either hand



And relax occasionally, this way

- 1 Come up from all fours to a praying position on your knees
Keep your back straight
 - 2 Stretch your arms wide out at the sides, then straight up over your head
 - 3 Sit back on your heels
 - 4 Round the back and drop forward, arms relaxed
- Repeat this three or four times It will get the kinks out

Scrubbing the Bathtub

Scrubbing a bathtub taxes disposition as well as muscles To reach it, you try bending your knees The tub sets too low for that So you get down on your knees Then the rim bumps up so high your arms won't strike bottom You can, of course, invest in a long-handled bathtub brush, but something about getting-the-hands-right-into-a-scrubbing job appeals to us women

HOUSE OF CORRECTION

If the tub is high, try it this way

- 1 Stand close to the tub and bend the knees slightly
- 2 Place one hand on the back of the tub as you bend forward from the hips with straight back.
- 3 Don't try to clean the entire tub from one position. Do a small space, then move to an adjoining area.
- 4 Keep changing hands for holding and scrubbing.

If the tub is low, here's the easier way

- 1 Get down on your knees, one or both. And use a pad under them.
- 2 Keep your back straight, not humped over
- 3 Place one hand on the wall back of the tub
- 4 Scrub in small areas and keep changing hands.

Working at the Sink

To work at a sink without strain demands a sink of correct height. If you are average height and your sink fairly modern, you should be able to work at it with comparative ease. Home economists and mechanical engineers have cooperated on determining the best heights of sinks and designing them to those specifications.

If you're short and the sink too high for you, do use some sort of extra platform to stand on so you won't strain upward all the time. Just make sure the platform is solid and firm and sufficiently wide so there's no danger of turning an ankle or falling off.

If you're too tall for your sink and you find it impossible to have it raised, remember to do necessary bending from the waist. This is not a difficult habit to form if the mind is put to it.

Whatever your height, keep your sink work—dish washing, vegetable-cleaning and so on—as close to you as you can. Most modern sinks don't invite trouble on that score. In my summer home is a big old-fashioned sink both extra wide and extra long. Unless I use my head in arranging my work, I find myself reaching all over the lot for the materials in the sink.

YOUR ACHES—WHAT TO DO ABOUT THEM

Using a Broom, Mop, and Sweeper

Start right by buying the lightest possible efficient weight

Using a broom involves a swinging motion of the arms that can get very tiring. Broom in hands, stand erect, bending slightly from the hips. Make the sweeping motion small rather than extensive. Don't chop at the rug, of course, but don't try to cover a great area in one stroke. It's harder on your arms and raises more dust. Keep the broom close to you, almost vertical. And after you've swept a few strokes from left to right, do the next few from right to left. This equalizes the pull on both sides of the body and helps avoid setting up those one-sided aches.



Mopping forces the arms to push and pull. These motions require the aid of the chest muscles, so don't crowd them by letting your chest round over. Move from the hips rather than from the upper back, when the body goes forward and backward. Or let the whole body sway, shifting the weight forward and back in rhythm with the mop.

Running the vacuum or carpet sweeper also involves the push-pull motion and the pectoralis muscles. If you use only one hand on their handle, use the right for a short time and then the left.

Dusting

Danger stalks you when dusting. It lurks in straining across tables, up to the top of tall book cases, over a wide sofa to reach the picture on the wall. Avoid it. Walk around the table. Stand on a sturdy stool for the book cases. Put the dusting cloth on some kind of handle and use it, with or without a stool, to reach pictures and mirrors placed over heavy furniture.

When you dust under tables, use the floor-scrubbing position . . . on your knees, legs extended in back of you, back straight, head in line with back.

HOUSE OF CORRECTION

Moving Furniture

Modern cleaning equipment has made the old spring and fall house-cleaning sessions only a horrible memory for many of us. Yet the good housekeeper knows that low built furniture must be moved occasionally if she is to be free of "dust mite." What must be, must be, and pushing is always easier on the body than pulling or lifting. So try to *push* that heavy sofa next time you must move it alone. Better still of course, is not to move it by yourself.

When you must lift—and this goes for lifting any heavy object, including furniture—prepare your muscles for the lift. That is, contract them slightly. This should give you much the same feeling you have when trying to keep your balance standing on one leg. You mentally contract the muscles before starting movement.

To lift a low object just a few inches, such as to slip a rug under a sofa or chest, there are two rules to follow

- 1 Get down on both knees, or on one knee and one foot, with body close to object.
- 2 Lift straight up, keeping upper back straight.



This sounds harder than it actually is. Shoulders, remember, are built like a yoke and a yoke is built to bear the weight of heavy hanging objects. The described position distributes the weight of the object fairly evenly over the entire back, but puts more of a load on the stronger shoulders than on the weaker lower back.

When something must be put under the lifted furniture, as in laying a rug, get help. Don't ever try to hold the lifted object with one hand while you roll the rug under with the other.

When an object is low and must be both *lifted and carried*, put legs, thighs, back and shoulders to work. Don't depend just on your back or only on back and shoulders. This system uses all those muscles.

YOUR ACHES—WHAT TO DO ABOUT THEM



- 1 Bend both knees, keeping back straight.
- 2 Lift directly up, keeping object close to body
3. If you feel a strain, STOP and get help

If the object to be lifted and carried is too high to use the bent knee position, work in the following position

1. Bend forward from the hips, back straight.
- 2 Bend the knees slightly. This will force you to use your leg muscles
- 3 Flex the elbows slightly before starting to lift This accomplishes two things it brings you closer to the object and gives more power with less strain

Tasks Involving Reaching

Many housewifely tasks require reaching You reach when you wash windows, hang a picture, dust a high object, get something down off a shelf For any kind of reaching start this way

- 1 Stand directly in front of and facing the object
2. Distribute your weight evenly on both feet Then you can reach straight up instead of twisting to one side Twisting increases the strain on leg and lower back muscles

For high reaching, use a stool, step-stool or ladder instead of your tiptoes A pair of asparagus tongs is very handy for lifting light items from high shelves without climbing Whatever you stand on, make sure it has a solid foundation and that its surface is not wet or slippery To use the stool.

- 1 Place stool as near to object as possible
- 2 Step up, placing foot either just to right or left of center, depending on which foot is used
- 3 Bring up the second foot and place it to the opposite side of the center.

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- 4 Balance your weight evenly on both feet.
- 5 Reach only as far as this position allows without body going out of balance

If a heavy object must be lifted down from a high shelf, have a chair, table or some other receiving surface near the stool on which you are standing. Be sure this surface is high enough so you won't need to bend far down to place the object on it. And place your burden there before you start to step down from your stool.

Wash Day

Though it may sometimes seem that way, everybody except you does *not* have a washing machine. Plenty of women are still turning out white-as-snow washes with no more mechanical gadgets than their own arms and a good washboard. Stand erect when you use yours bending from the waist with straight back as you scrub. Don't force the entire burden onto your arms, either. You can scrub with a motion that begins from the lower back. Continually scrubbing with arms alone overuses the deltoid trapezius and the upper arm muscles. If the back begins to tire use arm motions alone for a short time. Then return to arm-plus-back motion.



Many a clothesline is strung with aches. Can you reach yours with a partially bent arm? You should be able to. And where do you place the clothesbasket? On the ground? That's the hard way. Place it on a chair or a stool and give your bending muscles a rest. Is there a baby carriage left over from the last blessed event? Convert it into a clothesbasket that can be wheeled instead of carried from one working area to another. One husband removed the back from an old kitchen chair and fastened roller skate wheels to the four legs making a moving platform for the unwieldy clothesbasket.

YOUR ACHES—WHAT TO DO ABOUT THEM

Ironing Day

Iron either standing or sitting, whichever seems easier and more natural. In either case the ironing board height should be checked, for height is literally a sore point. Why aren't there more adjustable ironing boards? They all seem to come in standard heights, but women don't.

For standing, choose a height that allows your arms to be only partially extended. If it stands too high, your shoulders will hunch, if too low, shoulders will roll forward and arms strain.

For sitting, the board should be low enough so the feet can be placed flat on the floor. Sit close enough so your arms aren't held high.

Does your iron weigh an old-fashioned ton? Home economists' experiments prove that a heavy iron is unnecessary. It's the heat, not the heft, that counts. A light iron with first class heating unit does the best job. There's no need of handling more than three pounds. You can find even lighter irons and the light one won't tire your arms so soon. Try out the handle shape before you buy. There are many kinds. One will fit your hand better and make lifting easier.

Mending Day

If you ever took a Home Economics clothing course in your school days these sewing instructions will have a familiar ring. Your teacher did her best to impress them on you.

When it's time for hand-mending, select a comfortable (though not too comfortable) chair, one in which you have some back support and of such a height that feet can be placed squarely on the floor. Don't be tempted by an overstuffed job that leads to lolling. Assemble all your sewing materials in a spot within easy hand reach of your work. Then sit with proper sitting posture. Lift your work up to you, instead of bending yourself down to it. If there comes a job that requires the work to be laid flat, use a table top instead of your lap. Upper back and shoulder aches develop after a stretch of sewing in the lap.

Use the same kind of chair for working at the sewing machine. And

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sit as you were taught in Chapter 3. Let your arms rest easily on the machine's surface. Don't throw all your weight forward on them. Keep your shoulders relaxed and your head up. Then you won't hate mending day so much.

Your Special Exercise

Despite all the exercise your household tasks give you, you need more if you ache. Some of your muscles need freshening up, they're shopworn from too much handling. Others need to be broken in, they are stiff from disuse.

Do the *Routine for Women* given in Chapter 19. When you sit for a long time, as on mending day, break it up occasionally with the relaxing exercises described for the sitter in Chapter 12. When you've been on your feet all day, soothe those hard workers with the relaxation methods outlined for the stander in Chapter 13. And read again the chapter on Mental Posture. You know only too well how keeping house can make that sag!

AMATEUR BOUTS

16

ONE CROP CAN USUALLY BE COUNTED ON FOR A BIGGER YIELD WHEN it's grown on a fifty-foot suburban plot instead of a one-hundred-acre grassroots farm. That crop is aches. Almost always the professional outdoor worker, whether he farms, logs, digs ditches, or builds walls all day long, aches less than the amateur who spends an hour a day, two days a week-end, or two weeks a summer working for pleasure rather than profit.

There are excellent reasons for this, of course. The professional generally starts with better tools. Notably in the case of the farmer, he may be assisted by modern machinery that takes much of the back-breaking out of his tasks. . . machinery which the fifty-foot gardener couldn't use even if he could afford to buy it.

The professional is the more skilled in the right way of using his tools. Both experience and other workmen have taught him. Then, too, his muscles stay in finer trim because of the continuity of his work.

Yet don't imagine that professional laborers never ache. They are not robots, they have the same chances as anyone else of maiming a muscle or jerking a joint by careless use of it. Because their work requires so much muscular labor, they often forget they may not be using all muscles and suddenly call on an unused set for a difficult task. A young farmer friend of mine bent down one day to lift a large rock in a field he was preparing to plant. As he strained against it an agonizing pain shot through his lower back. He could not stand,

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barely was he able to crawl in from the field to where he could be helped to his bed. There he stayed for weeks before he could stand upright. You would expect him to have strong back muscles wouldn't you, with all the hay pitching he does. Ah—but that's his father you're thinking of. Today the farmer needn't strengthen his back with hay pitching. He simply rides a bucking baler that sweeps the harvest from the ground, packs, and neatly ties it in compressed blocks.

The farmer or other professional outdoor laborer may not need a dally set-up as complete as the office worker needs. Any outdoor worker, however, may well benefit by foot, back and abdominal exercises. As a "sidewalk superintendent" I have observed scores of professional workers with picks and shovels and other construction or destruction implements as well as farmers and wood choppers. Plenty of them go at their work in postures faulty according to body mechanics.

Don't "stuff-and-nonsense" this with any idea that the worker always does things the right way because that's the way he can do it easiest and best. Of course it is true that the right way is the easiest and most efficient way, but any worker may have set up faulty postures before he became a professional. Watch an infant or very young child, for example. He will usually make motions in the same general direction. When he starts to sit up he continues to pull toward one side. The muscles on this side grow stronger and the habit persists if not corrected. When the child reaches the age where he can use adult size implements he will still pull toward the stronger side and use the stronger muscles.

Using the same muscles can hardly be avoided in daily occupations. We must learn to use those muscles in ways that produce the fewest stresses and strains according to the principles of body mechanics. Industrial engineers design machinery in accordance with laws of leverages so strains on the machine will come where they will do the least damage to a long and useful life. The body is the most wonderful machine that has ever been designed and leverage laws were applied in making the pattern for it. No machine devised by

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man is capable of performing as many different types of operations as the human body. We must become body engineers, using it as was intended, so it will stand up for as many years as we need it.

A few paragraphs back I spoke of myself as a sidewalk superintendent. I want to correct any impression that may have given you that I am only a bystander. Every task discussed here I have done myself—not just once but many times. I grew up in farming country. My summer home is situated where very little help can be obtained. My own activities there include removing New England type boulders from my driveway and lawn, shingling and tarring the roof, chopping down trees and cutting up firewood, spading, planting, weeding and crop harvesting by hand, building stone grills and walls. You may rest assured the methods described here are not theoretical but proved practical.

USING SHOVEL OR SPADE

Correctly used, a shovel or spade is an all-round exercise machine, calling on back, chest, abdomen, legs, thigh and arm muscles to be up and doing. Yet of all the amateur's outdoor labors, spading turns up the most aches and groans of "Oh, my back! Oh, my arms! Oh, my legs!" These groans come louder from the five-day-a-week office worker who attempts to turn over his whole fifty-foot plot in one week-end. I both sympathize with and deplore his ambition—unless consistent exercising has prepared his muscles for this chore. If muscles have grown flabby during the winter, do stop for rest frequently. There'll be fewer aches, too, if the spade is handled this way:

Loosening the Dirt

If the spade has a handle bar, proceed as follows:

- 1 Grasp the handle with both hands, backs of hands up
- 2 Place spade blade on ground and stand close to it, back and head erect
- 3 Place ball or center of foot on top of spade blade, with other foot pointing straight ahead

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4. Push down hard with foot and hands, steady ing spade with hands so blade does not angle off to one side.

If the body is held erect all the big muscles of the leg thigh and back get into the push. If the body is hunched over the spade in a rounded position much of the big muscles pushing power is lost. Change the pushing foot frequently to avoid arch pains.

If you are using a spade with a straight handle minus the short bar across the top grasp the handle with both hands near the top, hands close together



Lifting the Dirt for Disposal

Using a spade with top handle

1. Leave one hand on the top, but turn it palm up
2. With the other hand, grasp the shaft far enough down to give adequate lifting leverage
3. Bend from the hips with straight back as you lift. You then have full use of all lifting muscles.

When using the straight-handled spade, one hand remains at the top in its original position while the other slides down the handle to the leverage point.

Occasionally, as you spade turn yourself around so you face the opposite compass point. Then, if you have been throwing the dirt to your right, throw it to your left into the pile or the wheelbarrow. Change of position changes the twist on the body and both sides of it get exercise.

Many amateurs dig with one hand on the spade's top handle and the other lower down on the shaft. They will undoubtedly find it most awkward to place both hands on the top handle for the push. They would also find it awkward if after swimming in a certain way for some years a swimming instructor began to teach them a different speedier technique. Using two hands on the top of the spade

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allows more muscles to come to your aid, and the quick change you must make in hand position when you start lifting gives the muscles a momentary relaxation

RUNNING THE LAWN MOWER

With a garden to spade and a lawn to mow, you are lucky indeed. It is only too bad that the spading season is so short, for the combination of these two activities provides just about all the outdoor exercise the body needs for a thorough top-to-bottom workout. In case you're interested, they are also good for liquidating that corporation you took on in the winter.

Mowing the lawn is just the time to concentrate on the erect posture that hoists abdominal muscles and holds them firmly. A dull or badly adjusted lawn mower makes concentrating more difficult; at the same time it wears out your muscles. Give the mower the once-over before you put it out to grass.

There are two ways to run a lawn mower. One uses mostly arms and shoulders; that's when you double up over the mower handle. The other uses arm, shoulder and back muscles, that's when you stand erect as you push. The second way is the right way—if you need to be told.

If the lawn slopes and ripples with hollows, figure out your several tasks ahead of time so you can conquer those obstacles with the least expenditure of energy. It would seem unnecessary to point out that mowing a slope horizontally instead of up and down takes less energy, except that I have seen so many mowers grunt and strain up a sloping bank.

TRUNDLING A WHEELBARROW

Don't trundle a load of aches around in your wheelbarrow. You're putting the first ache in when you buy the heaviest one you can, figuring it will last longer. It probably will, but you won't. You shovel in the second ache when you fill the barrow, be it heavy or light, too full. The load should not pull your arms out straight when you lift it.

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The ache when it comes will probably be in the elbow joint as straight arm propulsion concentrates strain at that point.

Grasp the handles of the barrow with the arm muscles slightly contracted. That means that they will be bent a bit at the elbows



For the lift, bend the knees, keeping the back straight. Feel where the pull comes in your body. It should be in the shoulder girdle. It's built to take it. Keep your back straight as you move along too, and walk slowly. When possible, go around grades instead of up them. If the lay of the land is such that you can't let the body incline slightly forward, from feet to head, as you push up. The inclination is similar to that of going up stairs.

GARDENING BY HAND

How do you weed? One home gardener insists the only way to do it comfortably is to sit—right on the ground or on a pad. Well, that can be tough either on the plants if you sit in among them or on the body if you sit beyond them and must twist and stretch to reach the weeds. Another swears by the sit-on-a low footstool method. That would seem to interpose interference from the knees.

For such a small subject, weeding techniques can stir up many controversies—almost as many as it can aches. Mostly they rage about whether to squat or to kneel, whether to get onto one knee or both. There is no controversy over the wrong way to do it—that's standing bent over double and reaching way down.

Weeding the planting that preceded it, the cultivating that makes it less necessary, and the harvesting of the low-growing flowers or vegetables that repay you for it—all these gardening chores require getting down close to the ground. My experience says that the easiest way in the long run is kneeling. It puts less strain on any one part of the body. Kneel with weight on both knees or on one knee and one foot. If you use the latter method change knee and foot frequently. Use a fairly thick pad—sponge rubber is easy on the knees.

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while it protects them When you bend forward, do it from the waist with straight back. Don't try to cover too large a space from one position When you feel your reach becoming a stretch, move to another space

For higher growing produce, you stand, of course, and do your bending with the same straight back

USING AN AX AND A PICKAX

If you've never used an ax or pickax, play smart Take it easy when you are learning This precaution will save you many aches, it may even save a foot Both of these implements are dangerous in the hands of the amateur They have a way of getting out of control Or perhaps it's the user who gets out of control Anyway the result is the same—an injured foot or leg

So be sure you understand what you are going to do before you try to do it Then practice without putting any force into your blows. Be sure the blade or pick is used well away from the lower body. Don't attempt any real work with them until you feel very sure of the technique of using both these tools

Chopping Wood

Wood chopping done by a real woodsman is as beautiful to watch as a Davis Cup match And it requires fully as much coordination Control of the ax and the ability to place it exactly where it is wanted come only from long practice in the correct placement of hands and arms and the rhythmic timing of the body's movements At no time may the body be doubled over with back rounded and abdominal muscles relaxed

- 1 Stand facing the log to be cut with feet about 18 inches apart and parallel, or with Left Foot a few inches ahead of the Right (In the event you are Left handed, reverse the position of the feet Also reverse the directions which follow) The width of the base depends somewhat on the height of the person

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- 1 Grasp ax handle, Left Hand near top and Right Hand a few inches from the blade itself
- 3 Swing the ax in back of the Right Shoulder, at the same time pivoting toward the right with body weight mostly on the Right Foot.
4. As the ax begins its downward swing, the body re-pivots to face the log while the Right Hand slides along the handle toward the Left Hand.
- 5 On the re-pivot of the body, the weight is redistributed over the Left Foot and the strength of the entire body is behind the ax as it hits the log.

Loosening Rocks or Hard Soil

The technique of using the pickax is similar to that of the ax. Though the same perfection of aim is usually unnecessary, foot position, grasp on the handle and the swing back of the shoulders are just the same. Both these implements, correctly used, employ the large muscles of the thighs and back.

LIFTING AND CARRYING HEAVY OBJECTS

Inevitably a rock thrusts up just where you don't want it. Another bushel basket of topsoil is needed a hundred yards from where it is. The Yule log must be brought in for drying. A big box of tomato seedlings weighs a ton.

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All must be lifted and carried and all bristle with potential strains and aches. Lift them as you would lift heavy furniture, according to Chapter 15. After lifting, keep the arm muscles contracted and elbows partially bent and rest the object against the thigh muscles and abdominal region. As you walk forward, hold the shoulders well back and keep the back fairly straight. You may find it necessary to lean backwards slightly to compensate for the forward pull of the object carried. If you flex the knees slightly, the contracted muscles through the thighs and legs assume some of the burden.

Often a heavy weight can be handled easier by placing it on a strong piece of canvas with ropes attached. The ropes are passed over the shoulders and across the chest. Then with body bending forward from the waist, canvas and weight are dragged along the ground.

Always be extra careful in heavy lifting of this sort. It is one of the most common causes of strained backs and of hernia.

Anyone who does or plans to do a variety of outdoor labor needs strength in the large muscles. The exercises in Chapters 5, 6, and 7 will give it to them. Once you feel they are in proper condition, keep them that way by the routine to be found in Chapter 19.

ALL WORK AND NO PLAY MAY WELL MAKE JACK A DULL BOY. But all work for fifty weeks followed by two weeks of play has made many a Jack a very painful boy. Likewise for Jill.

The human race has been blessed with the wonderful faculty of forgetting pain. Scarcely a man who could describe accurately right now the torture he experienced last week when his broken arm was set without an anaesthetic. Never yet has a woman lived who could tell another woman what agony to expect with the coming of her first baby. Cruel as the pangs of such experiences are and no matter how sharply they etch themselves on our consciousness at the time just a few hours wipes them from memory's slate.

So until time ends vacationers and week-enders will be as they've always been. Despite the self-inflicted aches of last year or last week-end Monday will find most of them back at accustomed tasks too tired and aching to hold up their heads.

It's all so needless. Just two simple precautions could make all the activities they engage in 100 percent pleasure instead of 50 percent pain. Keeping fit all year round, and not going all-out on their first seasonal encounters with occasional sports and games.

Anyone who keeps a daily engagement with an all-round exercise routine can face a week-end of wood chopping, skating, badminton or what-do-you-do with joy—and look back on it in the same mood. My pupils who exercise regularly—and many of them are desk sitters—report that rarely do they ache after week-end and vacation

YOUR ACHES—WHAT TO DO ABOUT THEM

sports or labors. On the other hand, a few dilettantes who exercise only when the spirit moves them come crawling to my studio after the first spring week-end crying for massage and heat treatments to soothe their golf or tennis or gardening aches.

I believe in regular systematic exercise. Though you may not, you can still get yourself in shape for fairly strenuous vacation activity by starting three or four months ahead of your vacation with the routines outlined in Chapter 19. You will have to go through them every day during that period and put in at least a half hour on them. If you know your back or your feet or any other part of your anatomy is particularly weak, add to the routines the special exercises given in the chapters that discuss those parts. Such a schedule won't, of course, keep you in condition for those week-end jaunts that come up between seasons. Only a regular exercise schedule can do that. Don't forget, either, that any sport or activity continued for long periods overuses one set of muscles at the expense of the others, and the overused set will be sore even though you're a regular exercise addict. Even such perfectly trained and conditioned young people as the famous Rockettes complain of soreness in some muscles when they start practicing a change of routine. My exercise set-ups never dwell long on one set of muscles. They proceed from one type of movements to another type that is planned to compensate for the previous one.

Now that other matter—the all-or-nothing-at-all attitude that so many take toward vacation and week-end activities. *Moderation in all things*, that guiding light of the old Greek philosophers, should be tattooed on the chest of all such. Remember the song popular a while back, "Take It Easy"? Make that your theme song. Don't try to swim the widest river or climb the highest mountain during your first ecstatic twenty-four hours. Postpone the all-day hike or horse-back trip till near the end of your stay. Work *up* to the most strenuous point or you'll be down from it almost before you start. Give your body a chance to relax. Always, but especially at the beginning, stop participating in the game before you have to stop from exhaustion.

Make a note that clothes and shoes can help or hinder. Remember

that changes of elevation, sunniness or humidity of climate cause actual chemical changes in the body and it must have time to adjust itself to these changes. Give in to them instead of fighting them. As for the discomfort—nay danger—of sunburn and snowburn they should not need mentioning. Or should they?

This chapter will not attempt to tell you *how* to swim play tennis, ping-pong or golf, ride a horse, ski or skate. All these and other such sports should be learned with an expert instructor and cannot be learned from a book. They are all top-notch ways to get exercise and relieve tensions. They aid and abet your circulation and coordination. They firm your muscles and flatten your middle. But with the exception of swimming none of the popular sports gives equally balanced exercise to all of the body parts. In the majority of them, from tennis to pitching horseshoes one side of the body performs most of the work. Off hand I can think of only a half dozen that exercise equally both sides of the body: bicycling horseback riding rowing skating (both ice and roller) skiing and swimming. And with the exception of swimming none of those bring all parts of the body into play. Yet all the body must be in trim to win over aches.

That is why proficiency in a single sport does not give anyone the right to say 'I don't need exercises. I play squash (or badminton or bowl etc.) every day.' You may be giving your legs or your arms a dandy work-out but what's happening to your chest and back and abdomen? Many a golfer can't keep his eye on the ball because he can't see over his stomach. The sports enthusiast does need exercises—to play fair with all parts of his body—to develop his teamwork. He needs to learn how to relax too particularly when he's a tyro at the game. Championship performance demands the ability to relax. A constantly tense muscle soon loses the power of jumping into action speedily. Let your eye follow the ball but don't hold your breath while you do it.

But many vacation and week-end activities are not instructed sports and there are both easy and hard ways to do them. You'll enjoy them more if you take the easy path and here are the blazes on that trail.

Long Walks

Chapters 3 and 13 have told you how to walk. You'll find it easier on country roads than on city pavements and so may be tempted to do too much of it too soon. Don't. Especially don't attempt long walks in the sand of ocean beaches. Sand walking is one of the most beneficial kinds, particularly when done barefooted. It forces you to use your toe, foot, leg and thigh muscles. It is also one of the most difficult when the sand is soft and dry. Because your feet sink in instead of remaining on a level, far more strain is put on Achilles tendon, calf muscles and hamstrings. Watch out for sharp clam and oyster shells, too. Winter shoes have tenderized the soles of your feet.

Walking hazards exist even on quiet country roads. Your feet, no doubt, are accustomed to smooth pavements. A dirt road is rarely smooth. You'll encounter humps and hollows designed to throw the unwary off balance. Loose rolling stones await their prey, too, and ankles are easily sprained. Remember to keep your weight evenly balanced on both feet and toward the outer border, it may save you a stubbed toe or a fall. A carpet of pine needles on a woodland path is delightfully soft—and dangerously slippery.

One last caution to the woman walker. If you brought only high-heeled shoes or open-heel sandals, make yours rocking instead of walking. The rest of the crowd won't want you on their minds.

Hiking with Packs

Long hiking trips can be either a renewal of your joy in living or one big pain in the whole body. The best of you, when you pitch camp under the stars, will be just about ready to crawl under the tent flap the moment the last peg is in the ground. The worst of you will have hitch-hiked a ride back to your base long before sunset.

You know how to walk. Here are a few tips on the easy way to manage a pack. Carry a large pack so the weight comes just above the small of the back. Shun as you would poison ivy the pack strap so long that the pack rests on the lumbar curve. Two broad—and

adjustable—straps, one across each shoulder, help distribute the pack weight evenly

A smaller pack can be carried to one side. Arrange it so it rests on gluteus maximus rather than on the hip bone. Adjust a single strap so it passes across the shoulder opposite to the side on which the pack rests. Change the side often.

Tie or belt any light sweaters or jackets around your waist so your arms remain free and usable.

Mountain Climbing

Here's your schedule for mountain-climbing-made-easy. Walk a few miles on a level the first day. Try a gentle ascent the second day and if you tire before reaching the top, stop. After you've achieved the summit of the gentle hill, try one a little tougher. Just keep remembering that after you reach the top of the highest one, there'll be nothing left to conquer.

Mountain climbing puts a strain on heart and lungs as well as on leg muscles. If you start to pant and wheeze from the exertion or elevation, stop and rest. That means to sit down or lie down until your breathing is normal again. Take care when you rest not to become chilled. Cover up if you are perspiring and cool off gradually. Make your steps slow and as even and rhythmical as possible. Mountain climbing is quite similar to stair climbing but harder since feet almost never rest on a level. Your weight usually rests on the ball of the foot instead of on the entire foot as it should in stair climbing. Because the heel is continually lower than the ball, hamstrings and tendons are stretched. If your everyday shoes wear high heels, the torture in your hamstrings will be doubled. As in stair climbing, keep the body erect but inclined with weight over the forward foot.

In descending, the burden is assumed by the knee joints and they must fight against the pull of gravity. You may expect them to be sore unless they have been well experienced in preparation. Those knee bends suggested for the slitter make perfect preparation.

PERCHANCE TO DREAM

18

THROUGH THE CENTURIES SLEEP HAS INSPIRED AS MANY POETIC OUT-pourings as love, and lack of it as many tears. These modern days the tears flow more copiously than the poetry. More and more of their patients, doctors report, are begging for "Something to make me sleep." So serious has the sleeping pill habit become that laws have been and are being passed, making sale of sleeping pills illegal without doctor's prescription and renewal of the original prescription impossible.

When the outline of this book was shown to some critics, it did not include a chapter on sleep. It came back with the query, "Can't you also give some help to the fellow who's troubled with insomnia?" I debated this for some time, for sleeplessness is not a tangible like an ache. One can observe a person's posture and task methods, quickly determine the cause of an ache and outline the physical cure for it. But who can sit by the dark bedside of the sleepless and examine the crowded confines of his mind? For insomnia is 99 44/100 percent pure mental fault.

I have worked with insomniacs whose physicians have sent them to me after refusing to prescribe sleeping potions, and they have been my most difficult cases. In correcting a physical fault one sees what the pupil is doing. If it is done wrong, it can be corrected at once. But in dealing with a thing of the mind, one can only instruct, there is no way to see that the instruction is followed.

To the critics' request, this chapter is my answer. It includes

a series of exercises for physical relaxation. These exercises I have used over a period of several years with both erratic sleepers—those who have occasional spells of sleeplessness—and with real insomniacs. With the former they have scored an almost perfect success. With the real insomniacs, the report is not so happy. For insomnia cannot be cured by physical exercise alone. Whether the exercises or anything in this chapter help him depends mostly on the insomniac himself—on his capacity for self discipline, his ability to see a thing through, his real honest desire to break what is really only a *habit* but as much of a one as hitting one's fingernails.

THE ERRATIC SLEEPER

To the erratic sleeper, this advice—don't worry if you don't sleep for a couple of nights. An occasional sleepless night or two won't do you a bit of harm. That is not insomnia and if you were to give an accounting of all your activities in the preceding twenty-four hours, I think I would be able to point a finger and say, "This is why you did not sleep." It is when you begin to worry over your two nights' sleeplessness that you mix the makings of a real insomniac.

Various elements may enter into a particular pattern of occasional sleeplessness. Some have a factual basis—others but our own fiction, a clear case of (to paraphrase Shakespeare) "I think it so because I think it so." One of my friends who more than occasionally has dinner at my home demonstrates this every so often. She does not drink coffee at night because—so she says—it keeps her awake. For this reason I used to serve a caffeineless brew whenever she came to dine. One evening too late to shop I found we were out of her beverage. Real coffee was made. Knowing that coffee was never served to her in my home she drank her cup without question. Next day we talked on the phone. "Did you sleep all right?" I finally asked. "Fine," she replied. "Why do you ask?" I hastily fabricated. "I didn't sleep so well myself and I thought maybe it was something we had to eat." Since that day she has never had anything but real coffee at my dinner table and never has there been an ensuing complaint of sleeplessness.

YOUR ACHES—WHAT TO DO ABOUT THEM

bed a minimum of eight hours. These hours will refresh your body somewhat even if you don't actually sleep during all of them . . . provided you lie quietly without tossing. If you do sleep, so much the better. There are few of us who feel our best with less than eight hours. Many city dwellers whose sleep is made uneasy by noise and fetid air need a minimum of nine. A few mortals like Edison seem to manage on little or none, but his close associates revealed that Edison was able to cat-nap—and did—at any time under any circumstances.

Be sure your sleeping position is comfortable. Many will not agree with me, but I believe the best sleeping position is on one side with either both knees slightly drawn up or with the under leg straight and the upper one flexed at the knee. Don't, however, draw them up so high that they practically bump your chin. Stomach sleeping, beloved by many, I think bad. To breathe you must turn your neck far to the side and this encourages aches in the neck and shoulder areas. If you have a tendency to night leg cramps, put a small bolster or rolled-up blanket under the covers at the foot of the bed. This keeps the weight of the covers off your feet and legs. If you are very tall, loosen the covers at the foot of the bed before you get under them. Tight covers may bend your toes out of position and start, or increase, foot troubles.

There is no abracadabra that can be muttered to make a real insomniac fall into a deep, satisfying rejuvenating sleep. There is a deep underlying cause for his habit.

The sedentary or physically inactive person runs far more chance of becoming an insomniac than does the man or woman who engages in hard manual labor. A farmer, a carpenter, a logger, a houseworker—these are not the people who usually complain of sleepless nights. Their work requires physical exercise that has used their large muscles. They have not been subjected to the nervous tensions that go with conducting a highly competitive business or with any kind of office work. If they have their private troubles and worries, the tensions set up have been adequately taken care of by the large amount of exercise.

Now we cannot do away with all tension. A muscle must be in a

state of tenseness, or contraction, to act at all. Without a tensing of muscles we could not breathe or stand upright. But learning to recognize and locate unnecessary tensions is essential if the insomniac is to return to normal.

The learning process is no easier than learning any new skill or sport. The first step is to become consciously aware of need for a change in daily habits. Without this awareness you cannot apply the cure. Exercise is not the cure, though it can be a useful ally of the cure. The cure is relaxation of both mind and body—and not merely when you go to bed but during your waking and working hours. A tense day usually warns of a wakeful night, as the erratic sleeper will testify. When you have learned to sit at your desk, stand behind your counter, accomplish your household tasks and perform your other physical actions in the easiest and most relaxed manner, you have started to cure your sleeplessness. For you have learned how to relax specific groups of muscles and from that point it is not a far step to complete relaxation of all muscles.

Yet even physical relaxation is not sufficient. You must recognize your mental tensions during the day—those little fears that make you catch your breath, the petty angers at a fellow worker that flare up, the bigger angers at the boss that you don't dare let flare up, the race to beat the clock hands. Is this beginning to sound like Chapter 2? It should. It is only another piece in the mental jigsaw puzzle.

You must learn to localize the minor worries that assault you and confront them with a laugh instead of a lament. You need your strength for coping with big worries—if they ever arrive. Most insomniacs have nothing really tragic on their minds. It is not the mothers of desperately ill babies who lie awake at night. Nor the man who knows he has but two months to live. It is the person wondering how he or she can possibly meet a work schedule date, or whether if he pays his bills this month he'll still be able to buy the new overcoat, or if the new boss will keep him on or put one of his friends in the job or whether John is out with some other girl.

Most people can localize and analyze their tension patterns them-

YOUR ACHES—WHAT TO DO ABOUT THEM

selves If you cannot, a psychiatrist will be able to help you But the mere knowledge of what makes you tense and sleepless is not enough. You must rid your mind of it, relax it completely This can't be done by willing, "I will not think, I will not think, I will not think " That activates your mind as much as worrying

It will be easier to relax your mind if you relax your body and at the end of this chapter are exercises for body relaxation In addition I have a few "don'ts" which, if acted upon, should help rout wakefulness

DON'T expect to lie awake Remember what the Good Book says "As he thinketh in his heart, so is he " And it isn't a life-or-death matter if you don't drop off the moment you hit the pillow.

DON'T wear your worries along with your pajamas Take them off when you take off your day clothes and leave them both on the hanger Today's problems are as stale as your last cigarette butt, tomorrow's may never happen

DON'T discuss unpleasant problems with your wife or husband after you get into bed It may relieve your mind but keep your partner awake! Get these matters off your chest early in the evening if they must be tackled at all

SLUMBER SERIES

These exercises start off all of my classes The routine never varies You should do them after you are in bed and prepared to sleep After you have finished, lie quietly with inactive mind Breathe a bit more deeply and rhythmically than you generally do If you do not go to sleep immediately, repeat the routine

- I 1 Stretch your entire body, arms extended out and up, legs pushed downward, every muscle taut Twist and turn a bit
- 2 Let go completely Feel as though you were sinking into your mattress
- 3 Rest a few seconds and repeat three times
- II 1 With arms over your head or extended to the sides, roll over to one side with body completely limp
- 2 Fall back into flat position and let go completely for a moment.
- 3 Roll to the opposite side and fall back
- 4 Repeat the complete roll four to six times

PERCHANCE TO DREAM

- III. Push down hard, first one leg and then the other leading with the heel. Give six to eight good pushes and relax.
- IV 1 Stretch the arms straight up from the shoulders.
2 Reach up first one arm and then the other extending the fingers. The shoulder opposite the reaching arm should be kept down on the bed.
3. Alternate arms six times and relax.
4. Repeat twice.
- V 1 Clasp the hands on the back of the head.
2 Rock the head forward, gently but firmly
3 After six rocks, let the head fall back on the pillow and relax completely
4 Repeat three times.



- VI 1 Lie on the Left side. Left Arm placed comfortably under the head, Right Arm relaxed in front of body
2 Draw up the Right Knee as high as the abdomen, keeping Left Leg extended.
3. Stretch the Right Arm well back over its shoulder and let your head go with it. (You should feel a pull in your lower back.)
4 Let the Right Arm fall back in front of body and completely relax.
5 Repeat three times. Then roll slowly over to the Right Side and repeat three more times.

EXEMPLARY EXERCISE

19

THE FIRST TWO EXERCISE SET-UPS ARE DESIGNED FOR THE MAN OR woman who plans a daily program of general all-round exercise. Those who need to strengthen a specific part or area should also add these routines to their special exercises. If you schedule them for just before bed time, add the Slumber Series in Chapter 18.

A SET-UP FOR MEN

Sez Corporal Madden to Private McFadden:

*"Yer figger wants padd'n—
Sure, man, ye've no shapel
Behind ye yer shoulders
Stick out like two bowlders:
Yer shins are as thin
As a pair of pen-holders!"*¹



- I 1 Lie on the back, arms over the head, hips flat on the mat
- 2 Roll arms and shoulders over to the left side, keeping hips down.
- 3 Roll back to flat position
- 4 Roll to right side and return to flat position
- 5 Do all this six times

¹Robert W. Chambers *The Recruit* Courtesy, Appleton-Century-Crofts, Inc.

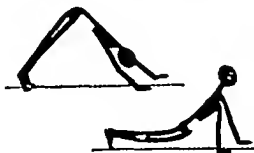
EXEMPLARY EXERCISE



- II. 1 Lie on the back, arms over the head, shoulders flat on the mat.
2 Roll hips to left side.
3 Return to flat position.
4 Roll hips to right side and return to flat position.
5 Do this six times.



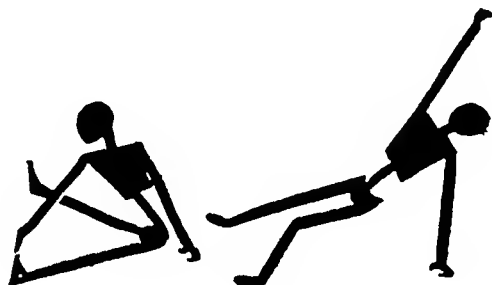
- III. 1 Lying on the back, pull both knees back to the chest.
2 Stretch both legs straight up in the air with heels extended.
3 Lift hips slightly from the mat.
4 Bend the knees and stretch the legs straight out on the mat.
5 Do this four times. Rest. Repeat four times.



- IV. 1 Hands and feet on the mat trunk raised to make a bridge. Arms and legs straight, not flexed. Back and head level.

YOUR ACHES—WHAT TO DO ABOUT THEM

- 2 Lower the middle of the body until the thighs almost touch the mat
Keep knees and arms straight and head raised upward '
 - 3 Do this up and down movement five times Rest Repeat five times
- V When muscles are stronger, add a few push-ups like this
- 1 Same starting position as Exercise IV
 - 2 Keeping back straight, lower the body, bending the elbows as the body goes down Chest and abdomen almost, but not quite, touch the floor
 - 3 Return to starting position
 - 4 Do this three or four times at first When it comes easy to you, add to the number of push-ups, but never do over 10



- VI
- 1 On your back, with legs spread wide apart and arms at sides
 - 2 Come up to sitting position with Right Hand over Left Toe, Left Hand resting on mat behind your Left Hip
 - 3 Raise entire body up from the mat, weight on Left Hand and Foot.
 - 4 As you raise the body, reach with Right Arm as far back over your head as possible
 - 5 Return to sitting position and then lie flat.
 - 6 Repeat using opposite side of body
 - 7 Do this four times Rest Repeat four times
- VII
- 1 Lie on the back, arms over the head, legs out straight
 - 2 Lift arms, head, chest, legs and feet toward the center of the body When abdominal muscles are strong enough, arms and legs will meet above the abdomen
 - 3 Do this four times Rest Repeat four times



EXEMPLARY EXERCISE



VIII. 1 Stand with feet about eight inches apart, arms raised out to the sides, shoulders relaxed.

2 Swing the Right Leg across the body trying to touch the Right Toes to the Left Hand. *Do not lower the hand*. Keep body erect in correct standing posture.

3 Swing Left Leg across to Right Hand.

4. Do the double swing three times.

5 Rest by drooping the body forward, completely relaxed.

6. Repeat entire exercise once.

IX. 1 Stand with feet eight to ten inches apart, arms raised over head.

2 Bend knees slightly and round the lower back by pushing hips down and under

3 Pull in hard on the abdominal muscles.

4 Stand straight and repeat the abdominal muscle pull.

5 Do this three times. Rest, lowering the arms. Repeat three times. Or six, if abdominal muscles are weak.

6. Do Exercise IV in Chapter 5

XI. If your feet are weak add the exercises in Chapter 8.



A SET UP FOR WOMEN

I. Do Exercise I in men's set-up.

II. Do Exercise II in men's set-up.

III. 1 Lie on the back, knees bent, feet flat on the mat, arms at sides of body

2 Raise arms over the head

3. Lift up the hips and pull abdominal muscles in hard.

4. Return to first position.

5. Do this five times. Rest. Repeat five times.

IV 1 Lying on back, clasp hands in front of body

2 Keeping legs flat on the mat, raise upper body to half-sitting position.

3 Return to starting position.

4 Do this four times. Rest. Repeat four times

V 1 Lie on back, legs out straight, hands clasped behind the head.

2. Push the head forward and at the same time bring both knees back to the head



YOUR ACHES—WHAT TO DO ABOUT THEM

- 3 Lower head and legs to mat.
- 4 Do this four times Rest Repeat four times
- VI 1 On hands and knees with back straight and head up
- 2 Raise Left Leg backward, with hip high and heel extended
- 3 Swing the leg from left to right and back again, four times
- 4 Lower Left Knee to mat and repeat with Right Leg
- 5 Rest and then repeat entire exercise



- VII 1 Stand with weight on both feet
- 2 Clasp the hands behind the back and extend them downward
- 3 Take one stride forward and bend upper trunk from waist over the forward knee At the same time rotate the shoulders backward and raise the head as high as possible
- 4 Come up to straight position, feet together
- 5 Take one stride forward with the opposite foot and repeat the bending
- 6 Do this five times Rest by slumping forward Repeat five more times



- VIII 1 Stand with hands clasped behind the head
- 2 Raise the Left Knee as high as possible, at the same time pushing the head down to meet the knee
- 3 Lower the Left Leg to a position one stride ahead of the body
- 4 As the Left Leg goes down and forward, raise the head and pull shoulders and head back, arching the lower back
- 5 Repeat, using the Right Leg
- 6 Use each leg six times Rest. Repeat six times



- IX 1 Stand with arms dangling from your shoulders
- 2 Shake arms gently until joints and muscles feel limp
- 3 Hop lightly on Left Foot, shaking Right Leg easily from hip joint
- 4 Let the arms flop and the head drop forward as you hop and shake.

EXEMPLARY EXERCISE

- 5 Do the same with Right Foot and Left Leg.
6. After a good shaking, relax on the mat.

EXERCISES FOR RELAXATION

These six exercises are those mentioned several times as demonstrating the difference between a tense and completely relaxed muscle.

- I. 1 Lie flat on your back on the mat.
2 Lift one arm straight up in the air and hold it there a moment.
3 Let it drop with a thud.
4. Do the same with the other arm.
- II. 1 Double up one fist, hard.
2 Straighten out that arm tensing the muscles and hold it a moment.
3 Relax, letting the arm drop
4. Repeat three or four times.
5 Repeat same number of times with other fist and arm.
- III. 1 Curl the toes of one foot under hard.
2 Push this leg down, leading with the heel, so you feel a pull through the thigh.
3 Relax. Then repeat three times.
4. Repeat with other leg.
- IV. 1 Lying flat on your back, pull in your abdominal muscles as hard as you can.
2. Relax. Repeat twice.
- V. 1 Flat on back and with arms straight out ahead of you, clasp your hands.
2 Pull with hands until your shoulders lift just off the mat.
3 Rock your head forward toward your clasped hands three or four times.
4. Relax, dropping back on the mat, arms limp.
5. Repeat two or three times.
- VI. This exercise can be done lying down, sitting or standing.
1 Squeeze your eyes shut.
2 Open eyes very wide and hold them open a moment.
3 Let eyelids drop very slowly
4. Do this three times.
5 Now open your mouth as wide as possible and inhale.
6 Close your mouth and blow the air out through the lips.
7 Do 5 and 6 three times.



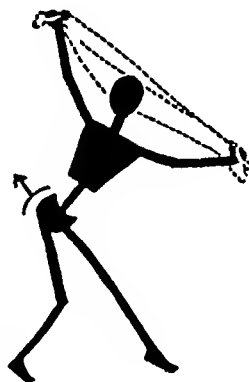
YOUR ACHES—WHAT TO DO ABOUT THEM

- 8 Squeeze your eyes closed and open your mouth wide, inhaling
- 9 Relax your eyelids and exhale through your mouth
- 10 Do 8 and 9 three times

BATH TOWEL BALLET¹

Used right, a bath towel gives you something to work against. It resists your efforts and makes you work harder and that's good for you. The first two exercises wake up your circulation and the second helps reduce the hips. Do them in the morning after your bath if you have time—otherwise, any time.

- I 1 Stand with feet wide apart.
- 2 Take an end of the towel in each hand and raise arms high above your head, pulling the towel taut. Have the feeling of pulling the entire body upward.
- 3 Push the head well back and yawn, twisting the upper body slowly first to one side, then to the other, several times.
- II 1 Stand with feet wide apart, arms and towel raised as in Exercise I.
- 2 Bend from the waist to the left, pushing out the Right Hip and muscles of the Right Side.
- 3 Now bend to the right, pushing out Left Hip and Left Side muscles.
- 4 Do this three or four times on each side.



The following three exercises strengthen and straighten, flatten and firm



- III This works on shoulders and neck, abdomen and back, chest and hips
- 1 Stand with feet wide apart, bath towel grasped and held high as in Exercise I
- 2 With chin up, twist body as far as you can to the left, bending both knees
- 3 Bend forward from the waist, head high and shoulders flat
- 4 Return to starting position and twist to the right and bend
- 5 Do this three or four times

¹ Reprinted by courtesy of *Woman's Home Companion*

EXEMPLARY EXERCISE

IV This, too, goes to work on shoulders and neck, abdomen and back and in addition stretches the leg tendons.

- 1 Sit on a stool or on the floor
- 2 With an end of the towel held in each hand, loop the center of the towel under the arch of the Left Foot and extend the Left Leg out straight.
- 3 Pull the leg back with the towel, bending the knee and lowering head, shoulders and chest to meet the knee.
4. Push leg back to extended position at the same time straightening the shoulders and back and pulling in the abdominal muscles.
5. Throw head well back and lift chest.
6. Repeat with Right Leg Rest. Repeat three or four times.



- V
- 1 Stand with an end of the towel in each hand, towel behind the neck.
 - 2 Briskly pull the towel back and forth several times across the back of the neck, at the same time dropping shoulders and head forward.
 - 3 Still moving the tightly held towel, raise head, shoulders and chest and push back hard against the moving towel.
 4. Repeat three or four times.

This last bath towel exercise will help your aching feet—their arches and toes—and help stretch leg tendons.

- VI
- 1 Sit on a stool, one end of the towel in each hand and the towel looped under the mediotarsal arch of the Left Foot.
 - 2 Extend the Left Leg straight out, leading with the heel and keeping the knee straight.
 - 3 Pull the towel taut and grip the toes hard over the edge of it.
 4. Now pull harder with the Right Hand so the foot is rotated inward.
 - 5 Repeat with Right Leg and Left Hand.
 - 6 Do this three or four times.

TWO EXERCISES TO RELIEVE MENSTRUAL PAINS

Do these regularly—at least once a day and better twice—if you are troubled with menstrual pains. Continue them during your menstrual period.

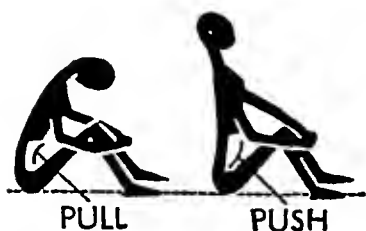
- I.
- 1 On your back, knees bent and feet flat on the mat.
 - 2 Pull in the abdominal muscles hard.

YOUR ACHES—WHAT TO DO ABOUT THEM

- 3 Push out the abdominal muscles hard
 - 4 Do this four times Rest Repeat three more times.
- II Exercise III in *A Set-up for Women* on page 173

CONSTIPATION CORRECTION

- I 1 On your back with bent knees, feet flat on floor, arms extended to the side
- 2 Raise the hips off the floor, weight on upper back and feet
 - 3 Circle the hips by pushing out to the right, then up, then to the left and back to straight position
 - 4 Make this complete circle four times Relax Then circle in opposite direction four times and relax completely into position 1
 - 5 Do entire exercise three times
- II 1 On your back with bent knees, feet flat on floor, arms either extended to sides or parallel with body
- 2 Open your mouth and breathe in and out with a quick panting effect As you pant, contract the abdominal muscles in and out—in with the intake and out with the outgo of the breath
 - 3 Keep this up for 15 or 20 seconds Relax Repeat several times
- III 1 Sit with knees bent, hands clasped around them, and feet on the mat
- 2 Pull in hard on the abdominal muscles As you do this, let the head come forward and the back round
 - 3 Push out hard on the abdominal muscles, sitting up in straight posture
 - 4 Do this five times Rest Repeat 15 times resting between each five



Do this series every day And don't expect your constipation to be cured the morning after your first attempt.

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